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THE IMPORTANCE OF IMMOBILIZATION AND POSTURE IN THE TREATMENT OF ACUTE INFECTIONS OF THE EXTREMITIES*

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IN THE management of acute pyogenic infections, the objective is plain, but by what ends that purpose is best served is not so obvious. Experience has suggested certain expedients which have become generally adopted in practice. It has been difficult to evaluate critically what the virtues of these tried remedial agents are. Surgeons individually have continued especially those therapeutic measures which have appeared to effect the end-result most favorably.

Rest, hot packs, incision and drainage have constituted the essentials of the usual surgical treatment of acute pyogenic infections of the extremities. Biers' hyperemia and roentgen treatment have their enthusiastic supporters. Surgeons generally have become considerably more withholding in the employment of incisions in the treatment of infections, limiting their use almost entirely to the evacuation of localized pus. Time was not so long ago when incisions were used freely in the treatment of cellulitis. Surgeons have learned from their own experience that these often did harm and rarely accomplished any good.

During the period of the World War, surgeons reverted again to the employment of antiseptics in wound management. Aseptic surgery, which followed so closely upon the Listerian scheme, displaced largely the use of antiseptic agents in the treatment of infected wounds. Like the use of ill-timed incisions, they often did more harm than good. With the development of Dakin's solution and the Carrel technic of its

employment, it appeared that the chemical Messiah had been discovered. Surgeons in high places who spoke with authority acclaimed its accomplishments. Said the late W. W. Keen: "Lister taught us above all how to prevent infection; Dakin and Carrel, following Lister's principle, have taught us how to conquer even rampant infection. . . . Prevention and cure both are now ours." Such statements are now only of interest as a matter of record but serve to indicate how even the best oriented may be deceived by new things. Most surgeons have learned that Dakin's solution, like incisions, will not accomplish localization of infection; only the natural defense mechanism of the body can do that. To be certain, Dakin's solution has real value, but chiefly in accelerating clearing up of an infection which the tissues have conquered already.

Anyone who reads the literature of infection of the early decade of this century, cannot escape the impression that an immunologic specific would soon be available for every bacterial disease. This hope which seemed practically assured never materialized. After a few triumphant exploits, the new science of bacteriology, which in a relatively short period of time revolutionized the practice of medicine, seemed to have become therapeutically sterile and no further conquests were forthcoming. Yet to the development of specific immunologic or pharmacologic aids, surgeons, whose office it is to deal with acute pyogenic infections, look with anxiety and hope; for we know that our accomplishment in the management of spreading infections is not great. Our task is essentially to help the natural de-

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fense mechanism of the body in its conflict with the infection and to evacuate pus when localized suppuration has occurred.

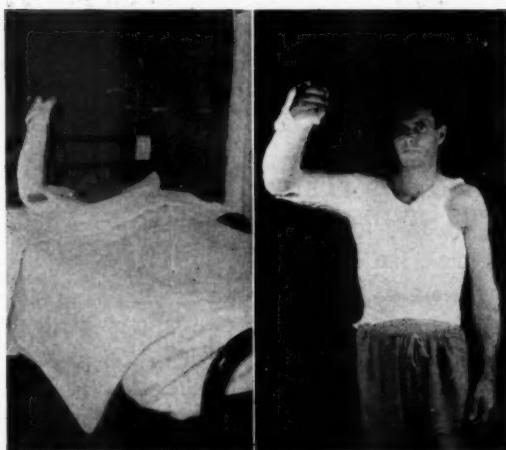


Fig. 1. (left) Immobilization of arm in a body plaster spica for phlegmonous inflammation of the hand. (right) Same patient ambulant. It is important that the extremity be placed in such a position that the hand will have maximum elevation in both recumbent and erect postures.

Immobilization

About four years ago, a young woman came under my observation who had sustained a compound fracture and a virulent phlegmon of the left thigh. After many consultations, short incisions for drainage were replaced by extensive incisions. These measures and employment of the Carrel-Dakin technic of wound irrigation all proved fruitless. Hectic fever continued and it appeared that we had lost our opportunity to save the woman's life by an earlier amputation. As a last gesture, a plaster spica cast, extending as high as the nipples and including both lower extremities, was applied—windows being left in for drainage. Despite adequate skeletal traction which had satisfactorily reduced the fracture, the relief from pain upon the application of the plaster was striking. In ten days the patient was afebrile and made a satisfactory recovery.

This experience was startling, and on occasion, when unsatisfactory results were had with orthodox methods of treating infections, as a matter of last resort, encasement in plaster was tried. The improvement attending its use suggested trial with the method as the initial mode of treatment. During the past two years, I have treated a large variety of acute infections in this manner,

with windowed plaster casts. Among these are spreading infections of the soft tissues of the hands and feet including phlegmons, lymphangitis, phlebitis, acute osteomyelitis and suppurative arthritis. It has come in our clinic to be the standard method of treatment. In tenosynovitis, the necessity for early opening by incision of the tendon sheath still appears necessary. In established felonias and paronychias, we have not employed immobilization in plaster. However, in all other varieties of hand infections immobilization of the hand and arm in a body plaster, in as great elevation as can be obtained conveniently, is regularly done. Latterly a severe burn of the trunk and lower limbs in a young child has been treated also in this manner. Vaselineized shirting was pulled over the burned lower extremities and trunk and a body plaster applied over all. The remarkable relief of pain was very pleasing to everyone. The child could be turned without discomfort and on the first change of plaster about three weeks later, the appearance of the burned area was very satisfactory—much of it had healed.

Immobilization in plaster, though it does not obliterate tonus or voluntary motion, does reduce movement to a minimum. The immobilization obtained by splints or traction does not begin to approximate the security and rigidity lent by adequate immobilization in plaster. The lymphatics, it is to be remembered, ramify in the fascias overlying the muscles. The importance of keeping muscles as quiet as is physically possible in phlegmonous inflammations is therefore understandable.

John Hilton, of Guy's Hospital in London, wrote a fascinating and informative treatise on Rest and Pain during the period of the Civil War in this country. Langenbeck suggested employment of windowed or bridged plaster casts in war wounds, and in the Franco-Prussian war, closed plaster casts were used by Ernst V. Bergmann in the treatment of gunshot wounds of joints, leaving the plasters on usually for about a period of a week. A short time later Dennis of New York (1884) pointed out the great value of immobilization in plaster in the treatment of compound fractures. With the advent of general acceptance of antiseptic and aseptic practices, this conservative plan fell largely into disuse, being replaced by more energetic techniques (irrigations, et cetera), by the sur-

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geon. Impressed with the futility of chemical wound management in localizing infection, Orr of Lincoln adopted rigid immobilization in plaster as a constant sequel to sequestrectomy for chronic osteomyelitis, shortly thereafter employing closed plaster casts and the massive vaseline pack together with extensive osteotomy as well, in the management of acute osteomyelitis.

Elevation

It soon became apparent that employment of elevation was a valuable addition to this mode of treatment of acute infections—particularly when the inflammation concerned the soft tissues. Increased relief of pain and quicker reduction of swelling were noted. Institution of rigid immobilization in a body cast with the extremity concerned in marked elevation occasionally made incision for the evacuation of exudate in soft tissues superfluous. Not uncommonly a single short incision sufficed in instances where one had anticipated doing considerably more. In paronychias where there is no hazard of dissemination of the infection, continuous steep elevation of the arm and hand on a suitable bed-side splint has been carried out with encouraging evidence of subsidence of the infection.

It is apparent that the patient must lie upon his back in order to secure the greatest elevation. If he sits up in bed, elevation of the lower extremity can not be obtained. (Incidentally, Fowler's position is much over-used by surgeons. I rarely employ it.) Raising the foot of the bed on a shock frame is a helpful means of obtaining elevation for the lower extremity when a body plaster is applied. For the thigh and leg the placement of staples in the cast permit it to be suspended at a steep angle by means of an overhead bed frame.* The upper extremity can be positioned easily in a condition favorable for lymph flow.

Hot Packs and Bier's Hyperemia

It is apparent that encasement of an extremity

in plaster affords little opportunity for the application of heat. In consequence, I have come to neglect its use and can not feel that a worthwhile



Fig. 2. A method for securing maximum elevation for an infection in the lower leg. When a body plaster cast is applied it is apparent that effectual elevation of the lower extremity can only be obtained by elevation of the foot of the bed.

therapeutic expedient has been lost thereby. The application of heat and employment of Bier's hyperemia are measures which increase swelling—objectives which, I have come to feel, are to be avoided in the treatment of acute pyogenic infections.

The experiments of Landis on capillary filtration throw considerable light on these matters. He has made direct measurements on capillary blood pressure and finds that a gradient in pressure obtains from the arterial to the venous end of the capillary. Mean capillary pressures at the base of the nail in man he found to be 45 cm. of water at the arterial end of the capillary loop and 22 cm. at the venous end. The ordinary colloid osmotic pressure of the blood in man is of the order of magnitude of 36 cms. of water. Measures which elevate capillary blood pressure therefore increase filtration into the tissues. Increases of venous pressure are directly reflected in the same degree in the capillary pressure. The swelling which occurs with dependency of an extremity or with the employment of heat or Bier's hyperemia is, therefore, readily understandable. The capillary injury which attends infection also results in increased permeability and augmented filtration of fluid. The only manner in which the tissues can limit filtration is through sufficient accumulation of

*I do not believe that maximum elevation of the lower extremity should be employed for long periods of time, particularly in older people. In the erect posture a patient with normal vessels has a blood pressure in his dorsalis pedis artery of 100 mm. Hg or more over that of the arm at heart level. The lower extremity therefore is not well accommodated to the lowering of systolic pressure which attends great elevation. However, fairly steep elevation is well tolerated and the warmth of the toes is a good indication of an adequate circulation. Elevation decreases venous pressure as well as systolic pressure—both of which in turn lower capillary pressure and decrease filtration. Parenthetically, I might add here, that it may prove that free use of the erect posture (which increases the hydrostatic force of systolic blood pressure) may be the best means of forcing blood through arteriosclerotic vessels before circulatory inadequacy sets in.

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fluid to produce a high tissue tension which tends to keep the fluid in the vessels.

Agencies such as Bier's hyperemia, which

extends to the knee on the opposite leg. A window is cut in the plaster over the tender area. Only when there is evidence of a subcutaneous

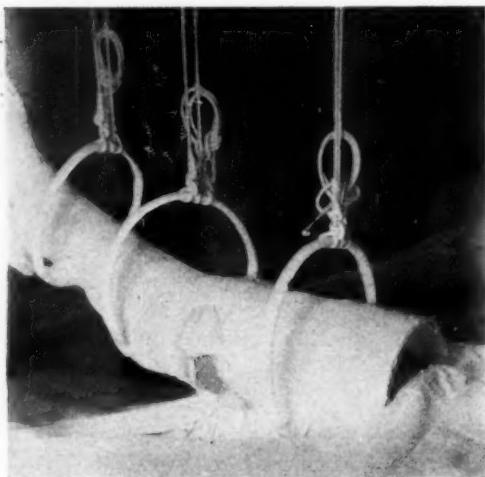


Fig. 3. This patient had a swelling of long standing attending a compound fracture. The reduction in swelling following elevation of the swollen member is evidenced in the separation evident between cast and upper surface of the thigh.

cause increases in venous pressure, probably abet the infectious process for it is well known that areas of swelling are predisposed to inflammation. Under increases of venous pressure lymph production is also increased. Great elevation of an injured or infected member above heart level will not suffice to prevent increased filtration in a damaged capillary bed. Yet with lymph outflow being favored by steep elevation it is apparent that swelling will be minimal unless the increased filtration is great. In the reduction of swellings of long standing in extremities as occur in malunited fracture and chronic inflammations of many varieties, I have come to feel that an inch of gravity operating for three days, will accomplish as much as three weeks of heat and massage.

Technic

I have elsewhere described in some detail¹⁷ the mode of management. Here, for purposes of clarity, I only wish to mention briefly the manner in which instances of acute osteomyelitis and suppurative arthritis have been treated.

A patient with an acute osteomyelitis of the tibia is encased in a body plaster with a long leg cast on the side of the lesion. A short leg cast



Fig. 4. (left) Second degree burn of the extremities encased in a plaster cast with sterile vaselinized shirting over the burned areas. (right) The situation one month later on removal of the cast; the burned area is nicely healed. Before the application of the cast the patient complained considerably of pain; following encasement in plaster the patient could be turned and managed without difficulty.

abscess is an incision made. In one instance (lower femur) because of persistence of severe pain despite immobilization and elevation, a single hole was made in the bone with a small gimlet before evidence of a subcutaneous abscess became apparent. Plasters are worn for a variable period, but usually until the skin is healed or drainage is minimal. As soon as the patient is afebrile, he is encouraged to move his extremity.

In suppurative arthritis, a body cast is applied similarly. A window of appropriate size is cut to permit aspiration of the joint (knee). If the temperature is not favorably influenced by daily aspiration of the exudate, short vertical incisions are made on either side of the patella after two or three days. A small rubber tube drain is placed down to the capsule. In order to secure the benefit of gravity drainage, the patient must lie on his face for several hours a day. Drainage is established for suppurative arthritis of the hip joint as soon as pus is obtained by aspiration. (Ober's posterior incision). Positioning in the cast to facilitate drainage is also important. Sulphanilamide may be given to advantage, for a large proportion of joint infections are streptococcal. The patient is encouraged to move his extremity as soon as he is afebrile. When movement in the plaster causes no pain and does not

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produce fever, the cast should be removed and a wider range of motion encouraged.

Conclusions

The rôle of the surgeon in the management of acute infections of the extremities has been reviewed. It is pointed out that his chief objective should be to assist the natural defense mechanism of the body in overcoming or localizing the infection. Other than that his function is that of a pus evacuator—to incise an abscess when suppuration occurs.

The great virtue of rigid immobilization and elevation of the affected member in infection is described. It should be the aim of the surgeon to keep the infected extremity as quiet as physically possible; in addition he should, through

employment of elevation, strive to keep swelling at a minimum. The attainment of these objectives serve the natural defense mechanism of the body in a most helpful manner.

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THE IMMEDIATE AND SUBSEQUENT TREATMENT OF BURNS

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IN THE past twelve years much progress has been made in the treatment of burns. Davidson's¹² discovery that tannic acid applied to burns formed a crust was outstanding in this field of surgery. Since then, the treatment of burns has been based on the surgical principle of making a "closed surface out of an open surface," without injury to tissue and consistent with early functional and cosmetic results.

In reviewing the literature on burns one finds the articles divided into two groups: those dealing with the factors involving the mortality and morbidity and those dealing with the treatment and care of burns. One is impressed with the controversy as to whether or not the morbidity and mortality in burns are due to toxic absorption or to the loss of vital body fluids. Robertson and Boyd²⁴ showed that toxic symptoms would be produced in eight hours if a normal animal were grafted with burned skin. Other investigators²⁰ have found that iodides are absorbed through burned surfaces. Rosenthal²⁵ reports that following burns there is a histamine-like substance in the blood stream capable of lowering blood pressure and causing a guinea pig's uterus to contract in Ringer's solution.

Kapsinow¹⁶ doubts that toxins can be absorbed through burned surfaces, as he was unable to find such evidence when phenolsulphonphthalein or strychnine was applied to the burned site. Blalock,¹¹ Underhill, Kapsinow, and Fiske²⁶ have shown that body fluids are lost through burned surfaces and that there is a concentration of fluids in the tissue surrounding burns. They point out that the so-called primary and secondary shocks following burns are due respectively to alteration in the relative and actual blood volume. The most convincing evidence seems to militate against the toxic absorption theory, although both factors may be involved.

In this paper an attempt will be made to outline the immediate and subsequent treatment of burns as practiced in the Children's Surgical Ward of the Cook County Hospital.

Tannic acid was used during the years 1934-1936 inclusive. During this period 395 patients were admitted for burns. Twelve of these died within twenty-four hours after the accident; eight died in the second twenty-four hour period and nineteen died after forty-eight hours, making a total of thirty-nine deaths or a mortality rate of approximately 10 per cent. It is obvious that statistics on burns are difficult to evaluate because of the many factors involved,

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namely: the cause, location, extent, degree, and the time the treatment is begun. The above figures are given to show the number of cases treated and the accompanying high mortality rate rather than to offer anything of statistical value.



Fig. 1. Method of debridement and careful, thorough cleansing prior to application of tannic acid-silver nitrate.

The deaths from burns as well as the cases requiring protracted hospitalization resulted chiefly from matches, coffee-pot and tea-kettle accidents. Many of these pitiful and tragic results, no doubt, could have been avoided if only a few precautions had been taken and if there had been a greater realization of the consequences of burns. From an economic standpoint it is easy to conceive how the financial status of a family with a moderate income could be completely shattered by such an accident requiring sometimes months of hospitalization.

Gentian violet has not been used because it has the disadvantage of staining everything with which it comes in contact and so adds to the nursing problem. Furthermore, the coagulum often cracks, thus allowing organisms to enter the burned area.

Picric acid preparations produce toxic symptoms when absorbed from extensive burned surfaces. Like gentian violet, it fails to form a firm, adherent crust. These objections prompted our use of tannic acid for the treatment of burns on our service.

From January, 1937, until October, 1937, the tannic acid-silver nitrate treatment of Bettman² was used in eighty-two consecutive cases. Two

patients died during the first twenty-four period; one died in the second twenty-four hours and three died after forty-eight hours, making a total of six deaths in eighty-two cases, or a mortality rate of 7.3 per cent.

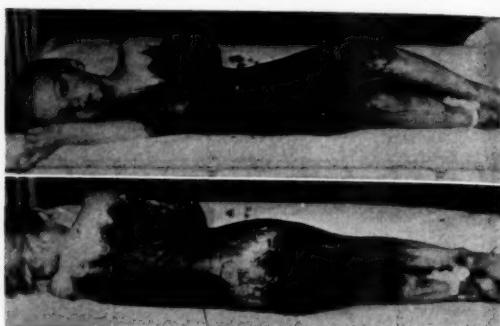


Fig. 2. (Above) Extensive burn showing the coagulum produced by the application of tannic acid-silver nitrate. Photograph taken two hours after accident. Note the apparent comfort of the patient. (Below) Posterior view of the patient.

It is the writer's opinion that the claims made by Bettman^{2,3,4,5} are correct and the treatment should enjoy more widespread use. The important claims which have been substantiated by our own observations are:

1. The patient is safely carried over the critical first twenty-four hour period by the rapid tanning of the burned area which prevents the loss of body fluids.
2. Infection is prevented by the rapid drying of the tanned tissues.
3. The patient is made more comfortable.
4. The nursing problem is simplified, especially in the first twenty-four hours.
5. A thin, flexible coagulum is formed (Fig. 2a, 2b).
6. The kidneys and other organs are saved from the effects of fluid concentration and the absorption of toxins and infection.
7. The burned areas heal quickly, thereby shortening the period of hospitalization.

Immediate Treatment

Whether or not the patient is in a state of shock is of primary concern. The treatment of shock supersedes the treatment of the burns. Shock following burns is best treated by the judicious use of morphine, maintenance of body temperature, the administration of oral and parenteral fluids, and blood transfusion. Following

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the improvement in the patient's general condition, the treatment to be used on the burned areas depends chiefly on the time that has elapsed since the accident and the gross contamination of the burned surface. If eight or ten hours have elapsed and the surface is so contaminated with grease, dirt, and clothing that it is likely that infection will result, then the burned areas had best be treated with moist saline dressings in an endeavor to promote drainage and sterilize the surface so that an early skin graft may be instituted. If the patient responds quickly to shock therapy and it is felt that the burned surface can be rendered clean, the treatment then is the same as if the patient had been seen immediately following the accident.

If the patient does not have symptoms or findings of shock, morphine is given in sufficient quantity to control pain and restlessness. In this regard, the respiratory rate serves as a reliable guide as to the dosage. The thorough cleansing of the patient at this time is of vital concern and negligence in this important step of the care predisposes to failure. To best attain this end, the disrobed patient is placed in a bath-tub which has a suspended false bottom (Fig. 1), which allows the escape of contaminated water into the tub drain. With this arrangement sterile sheets are placed under the patient, replacing soiled ones when necessary. In carrying out this cleansing bath, the surgeon and assistants wear caps, masks, gowns and gloves. Every effort is made to prevent the further contamination of an already contaminated field.

Benzine or other fat solvents are used to remove grease that usually has been applied to the burns before the patient enters the hospital. The patient is then given a thorough cleansing with white soap and sterile water. White soap has the advantage over green soap in being less irritating to the tissues (Koch).¹⁵ The loose burned tissue is carefully removed and blebs are opened. The controversy²⁷ on the rationale of opening blebs is of long standing. We believe that to open the blebs and tan the underlying surface precludes the danger of future rupture and infection of blebs incident to nursing care. This cleansing process often requires an hour of meticulous care and patience to render the unfortunate victim grossly clean. Much depends upon this detail in the successful treatment of burns.

Following the thorough cleansing, the patient is placed in bed on a sterile sheet. The burned areas are then dried with an ordinary electric hair dryer in preparation for the tanning. At this time it is well to inspect carefully the sur-



Fig. 3. Coagulum is allowed to dry under heat cradle covered by sterile sheet.

faces because a definite idea may be gained as to the depths of the burns. A dull, grayish surface usually means destruction below the dermal layer which foretells a long hospitalization. However, as Davidson¹² pointed out, because of the loss of fluids the surface area involved is of more importance than the depth in the immediate treatment of burns. Berkow¹ has computed the surface area of the body as follows:

a. Trunk	40%
b. Lower extremities	38%
c. Upper extremities	16%
d. Head	6%

Underhill and his co-workers have shown that a patient weighing 150 pounds with one-sixth of the surface burned, may lose 3500 c.c. of blood serum in the first twenty-four hours. For this reason the quicker the "open surface can be made into a closed surface" the better for the patient. With the use of tannic acid followed by silver nitrate, as described by Bettman, this end may be accomplished in a few minutes.

When the surface is dried, a freshly made aqueous solution of 5 per cent tannic acid is sprayed on the surface by means of an atomizer. Immediately after the single spray, silver nitrate in 10 per cent solution is applied to the surface by means of cotton pledges. There is very little

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pain during this procedure. A firm, adherent, flexible crust results almost immediately. The patient is then placed under a heat cradle (Fig. 3), covered by a sterile sheet and taken to his room. Light bulbs may be added to the heat

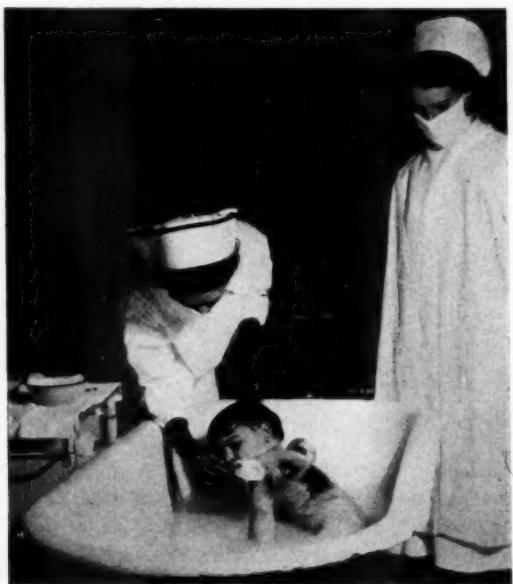


Fig. 4. Daily tub baths are given to cleanse granulating surfaces of pus and débris in preparing them for skin grafts.

cradle to maintain the temperature at a constant level. Occasionally the patient is placed on a Bradford frame to facilitate subsequent nursing. In this event the frame is covered with sterile sheets.

If there is a widespread surface area burned, a substantial blood transfusion is given routinely. Like Gunn and Hillsman,¹⁵ we believe that when there has been any oozing prior to the tanning, whole blood offers the patient the greatest benefit. The taking of oral fluids is encouraged and parenteral fluids are given as indicated. The most reliable criterion as to the adequate fluid intake is the urinary output. In a child if the output is 500 c.c. to 750 c.c. daily, the intake is adequate. In an adult 750 c.c. to 1000 c.c. usually indicates sufficient fluid intake. Of value in this regard is the erythrocyte count and hemoglobin reading, which may be elevated due to the relative or actual blood concentration.

Shortly after the crust is formed, the patient is comfortable (Fig. 2a, 2b) and will need no further medication to control pain and restlessness.

It is indeed a pleasure to see patients in such comfort and tranquillity of mind in contrast to the agonies shown prior to being treated. The most amazing thing is that the transition has taken place in such a short space of time. The necessary nursing care is reduced to a minimum and is in direct contrast with the treatment required when tannic acid is used alone and when spraying is needed every fifteen minutes for twelve hours.

It has been suggested that argyria may result from absorption but it has not been observed in our series of cases.

The eyelids are the only region not treated with tannic acid and silver nitrate. It would be impractical to splint the eyelids with the coagulum and in these regions bland ointments are best.

Minor burns lend themselves well to the tannic acid-silver nitrate treatment and can effectively be treated in the home or office.

Subsequent Treatment

Daily urine examinations are made in all burn cases. Albuminuria is rarely found even in the most extensive burns. A careful examination of the crust is made daily to ascertain any retention of pus. The temperature chart and leukocyte count forewarn of infection. If no infection develops, the crusts loosen and may be removed in two or three weeks, leaving behind a completely healed surface. If pus is found along the edges or anywhere under the crust, the overlying covering is immediately cut away in order to prevent the undermining of the entire coagulum. Moist saline dressings are applied to these areas to promote adequate drainage. These dressings are moistened and changed as often as necessary. Care at this stage may save the remainder of the covered areas from becoming infected.

Should the entire surface become infected, in spite of all the previously mentioned precautions, the patient (Fig. 4) is placed in a clean bath-tub and the crusts are gently removed by soaking in warm water to which soda has been added. When this unfortunate and not infrequent complication occurs, an attempt is made to get the surface in a suitable condition for an early skin graft. This objective is gained by giving the patient daily soaks in a bath-tub, at which time the dressings are soaked off less painfully, and the infected areas are carefully cleansed of pus

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and debris. Moist saline dressings are then applied. Blair and Brown⁸ have stated that they arouse the fighting forces of the surrounding tissue, provide adequate drainage and allay pain. Great care is taken in applying these dressings. Moistened strips of fine meshed gauze are placed next to the infected surface. The fine pattern of this gauze prevents granulations from growing up through the mesh.¹⁷ In this way the granulations are preserved rather than traumatized and there is no bleeding encountered when the dressings are changed. This smooth covering of fine meshed gauze is then covered by dressings moistened with saline. They are evenly applied and are thick enough to prevent soiling. Rubber tubing in which holes have been cut may be incorporated in the dressing and sterile saline may be instilled. Care is taken to see that the dressings do not dry in place. They should be moistened sufficiently to be absorbent. Excessively wet dressings cause the surrounding tissues to become macerated. Firm, even pressure is maintained by moistened, soft, sea sponges which are held in place by wide bandages. Adhesive tape and safety pins are so placed that the dressings are comfortable and will remain firm and stationary. Where a moving part is involved, such as the back, chest and abdomen, a wide elastic bandage tends to hold the dressing well in place.

Antiseptics are not used on granulating surfaces because they are irritating and tend to destroy the tissue. However, when necrotic tissue covers the infected area, freshly made Dakin's solution is used in place of saline for a few days. This results in a rapid separation of the necrotic tissues.¹⁰ Vaseline and other ointments are not used on granulating surfaces because they do not give the stimulation afforded by a moist saline dressing. Vaseline dressings prevent adequate drainage by allowing pus to accumulate on the infected surface.

Whenever dressings are changed great care is exercised in not introducing new organisms on the surface. It was our experience during March, 1937, that five out of seven burn cases developed fever and pus on relatively clean surfaces. All of these cases had been cared for by an attendant who was suffering from a pharyngitis. The importance of adequate masking has been properly stressed by Meleney,²¹ Davis,¹⁴ and others.

Throughout the period that the granulation tissues are being prepared for a skin graft, every effort is made to build up the patient's general physical condition. Precautions should be taken against exposure to upper respiratory infections which are so prevalent during winter and spring months.²¹ A palatable, nourishing diet is beneficial. When the healing powers of the patient seem to be at a stand-still, blood transfusions²³ often provide the necessary impetus to hasten recovery.

As Blair and Brown⁷ have so excellently stated, "skin grafting must be early, quick, permanent and conserve health, comfort, function, time and money." The proper time to cover the granulation surfaces with a skin graft is based on the patient's general physical condition and the condition of the site to be grafted. The patient must be able to withstand a short, general anesthetic. It should be felt that the healing potentialities will, with a degree of certainty, assure a "take" of the graft. The granulation surfaces should appear bright red, indicating their splendid vascularity. They should be flat and firm.²² Bacterial counts are not made because such procedures are indefinite and offer little clinical information. The surrounding tissue should not be red and indurated. When granulations are dull, grayish red in color and appear to be exuberant, jelly-like, with a large amount of drainage, they do not lend themselves to successful skin grafting and had best be further prepared.

Type of Graft

The best type of graft to employ should be one that will most quickly convert the open granulating surface into a closed surface with the best functional and cosmetic results. The graft that best fulfills these requirements, in the majority of cases, is the Blair split-graft of intermediate thickness. This type of graft is easily and quickly obtained in sizes large enough to cover completely the granulating surfaces. It is of uniform thickness, which adds to the cosmetic results. The fact that this type of graft includes a substantial portion of the corium prevents it from contracting, thereby giving a good functional result. The donor site heals readily without scarring. With this graft the "take" is remarkably good on surfaces that are only relatively clean.

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Ollier-Thiersch grafts include a very small portion of the corium and although the "take" is usually excellent, because of their thinness, they offer little protection. Also, on a movable surface they may contract up to as much as 60 per cent of their original size. Then too, they are not any easier nor any quicker to obtain than the split-graft of intermediate thickness.

Reverdin grafts include the epidermis with a very small portion of the corium. They are placed on the granulating surface as islands with the hope that epithelialization will take place and connect them. They fail to close the surface completely.

Davis¹⁸ small, thick grafts include varying thicknesses in each graft. Because of the technic by which they are obtained (cutting the base of a piece of skin that has been elevated by a needle) they are of full thickness in the center and thin at the periphery. Like the Reverdin graft, they are but islands on the site to be grafted and fail to make a complete covering. To place the islands on a large, granulating surface by this type of graft is time-consuming. This type of graft, when healed, gives a spotty appearance because of the uneven thickness. The donor site, from which these grafts are taken, is left with punched-out scars which also give an unsightly appearance.

"Seed" grafts almost invariably become smothered by exuberant granulation tissue.

Full thickness grafts and pedunculated flaps¹⁹ are not suitable for granulating surfaces. They are best utilized in reconstructive surgery, as in freeing contractions, where fresh, raw surfaces are made.

The split graft of intermediate thickness with its advantages, as stated above, has, in our hands, been the most effective in covering defects resulting from burns. The technic of the use of this type of graft on our service at Cook County Hospital is outlined as follows:

A general anesthetic is given.

Selection of Donor Site

A site is chosen that will provide the adequate amount of skin to cover the defect. The skin is usually taken from the outer or inner surfaces of the thighs. When these surfaces are unavailable the buttocks or abdomen are used. The skin on the back does not lend itself well for grafting. It should be borne in mind that hair

may continue to grow if the grafts are taken from a region containing hair. The donor site must be free of any infection. Furuncles, paronychia and other infections, even some distance removed from the field of surgery, may cause infection and destroy the hope for a successful graft.

Preparation of Donor Site

The surface is gently washed with white soap and water, using coarse cotton to cleanse mechanically the site. This preparation requires ten minutes or longer and care is taken not to traumatize the skin by too vigorous rubbing. Antiseptics are not used in this preparation as they destroy tissue.

Preparation of Receptor Site

The receptor site is also prepared with white soap and sterile water. When the surrounding tissues are washed, the granulations are covered so as not to submit them to undue contamination. The granulations are gently washed, care being taken not to cause trauma. The granulations down to the capillary layer, as well as indurated edges immediately around the site, are removed by means of a razor. In this way the granulations are made flat and even. Firm pressure applied to a saline dressing controls hemorrhage until the graft is applied. When persistent bleeders are encountered, they are ligated with fine silk. Curretting⁹ of granulations to freshen the surface should not be done as the resulting surface is left ragged and uneven.

Skin Grafting

A thin film of xeroform ointment is spread over the donor site. A Blair knife and suction traction are used to remove the skin. Firm tension on both sides facilitates the cutting of the grafts (Fig. 5). An endeavor is made to cut grafts which will completely cover the defect and slightly overlap its borders. When the site to be covered is of such magnitude that many grafts are required, they are placed so that each graft is overlapped by its neighbor, making a complete covering. A continuous horsehair suture is used to baste the graft down and hold it in place. When the surface is completely covered, several small holes are made in the graft by means of a sharp, pointed knife. This allows blood and serum to escape which might otherwise undermine the grafts. The entire grafted

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surface is then covered with a smooth, single layer of xeroform fine meshed gauze. The preparation used to impregnate this gauze is composed of 3 per cent xeroform in a vaseline base and is thought by some to limit the growth of staphylococci. Over this smooth covering is applied a large gauze dressing which is bandaged under moderate pressure. Soft, moist, sea sponges⁶ form the best means of applying pressure over an irregular surface. They are occasionally split so as to fit the surface and are so placed that firm pressure is exerted over the entire graft. It is of paramount importance that the entire pressure dressing is securely placed to prevent the graft from moving. This is accomplished by the use of wide bandage which is anchored by adhesive tape and numerous safety pins. Rubber tubes are incorporated in the dressing through which saline is instilled in an endeavor to keep the dressing from drying out. Meticulous care is taken in the application of the sea sponges. As Blair⁶ has emphasized, properly applied mechanical pressure controls oozing, eliminates dead spaces, limits venous and lymph stasis and prevents plastic material from pouring into the area.

The donor site is also covered with a layer of xeroform fine meshed gauze and a firm gauze dressing which is securely wrapped with bandage. It is best not to disturb the dressing on the donor site for ten days, at which time it is usually completely healed.

The dressings on the grafted site are removed on the sixth day. At this time great patience is needed in slowly removing the dressing so that the grafts will not be torn from their beds. The use of sterile cotton applicators facilitates the separation of the xeroform gauze from the graft and the wiping off of any pus found on the surface.

Sea sponge pressure is used in the daily change of dressings for the next few days to prevent bleb formation. Following the successful grafting of skin, gentle massage is encouraged.

Summary and Conclusions

1. The morbidity and mortality resulting from burns are probably caused by both absorption of toxic material and the loss of vital body fluids. There is convincing evidence to show that, perhaps, the latter cause is the greater factor.

2. The tannic acid treatment of burns was used in 395 cases admitted to the Children's Surgical Ward at Cook County Hospital during the period 1934-1936 inclusive. There were thirty-nine deaths or a mortality rate of 10 per



Fig. 5. Method of removing skin by means of Blair knife and suction traction.

cent, showing the disastrous consequences of burns.

3. In the nine month period beginning January 1, 1937, eighty-two consecutive cases of burns were treated by the tannic acid-silver nitrate method of Bettman. Our clinical observations confirm the claims made by Bettman for this therapy.

4. The importance of the initial cleansing with white soap and sterile water is stressed. When properly done this lessens the chances of subsequent infection.

5. Infection frequently complicates the treatment of burns. This is best dealt with by daily cleansing baths and moist dressings. The point is made that granulations are not traumatized when covered by a layer of fine meshed gauze. Sea sponges serve as the best means of applying mechanical pressure. With the intelligent use of these agents, infected granulations are quickly and effectively prepared for skin grafting.

6. The various types of skin grafts are briefly outlined. On our service the use of the split graft of intermediate thickness, described by Blair and Brown, has proven to be the quickest and most effective method of providing a permanent and complete covering to a granulating surface.

7. The technic for using this type of graft is given. The importance of a firm pressure dressing over the area grafted is discussed.

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I wish to thank Dr. Sumner L. Koch, Dr. Gatewood, and Dr. E. M. Miller for their cooperation and instruction given me regarding the treatment of burns.

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ERRORS IN THE DIAGNOSIS AND TREATMENT OF HYPERTHYROIDISM

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THE basis of this paper is a study of one hundred cases incorrectly diagnosed as hyperthyroidism previous to our examination. In every instance, thyroidectomy had been advised for relief of symptoms, but in no case was it possible for us to corroborate the diagnosis of toxic goiter. In none of the one hundred patients was surgery performed nor has the need for such ever been established. This study was begun in 1929 so that in many cases at least five years have elapsed since the error in diagnosis was determined. Recently a follow-up letter showed that many had completely recovered and that none was suffering from hyperthyroidism. Most of the patients were cases of nervous and physical exhaustion.

Not long ago the reverse of this error in diagnosis was true. Advanced cases of hyperthyroidism long overlooked and long treated as cardiac, gastro-intestinal disorders and other conditions were brought to the surgeon for cure. Within two decades a goiter-ignorant profession has become very goiter-conscious in contrast to

the situation a few years ago when the textbooks and medical schools were vaguely informative on this subject. They variously classified goiter as outward, inward, cystic, calcareous, nodular, irregular, physiological, et cetera. It was generally believed and taught that iodine was contraindicated in exophthalmic goiter. This notion had become popular because Kocher reported ill effects from the widespread use of iodine in the treatment of goiter in Switzerland. The resulting condition was termed Iodine Basedow and since the latter's name and exophthalmic goiter were synonymous, it was felt that iodine might initiate or aggravate the disease.

Today we know that this is not the case and that iodine in the presence of adenomatous goiter may precipitate hyperthyroidism but not exophthalmic goiter, although some still refuse to admit it. When I presented this idea before the American Association for the Study of Goiter in 1924,^{3,4} the subject was debated and the term "iodine hyperthyroidism" was criticized. Now, however, the literature generally supports this contention. In a recent study,² it was shown by Freeman and the writer that in

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a series of 279 cases of toxic adenoma, the disease was aggravated in 38 per cent by the use of iodine.

Much of this early confusion regarding the diagnosis and treatment of goiter has been clarified

by needless thyroid surgery throughout the country each year must be considerable.

From a study of these one hundred cases, I would place the source of error in diagnosis on the following factors: inadequate knowledge of

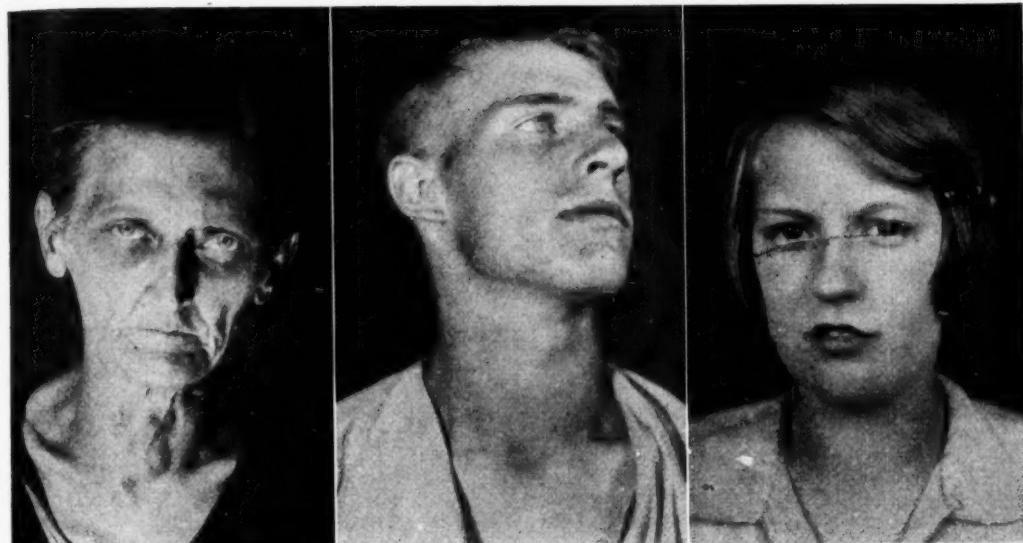


Fig. 1. Iodine-fast exophthalmic goiter. Patient had been taking Lugol's solution for six months.

Fig. 2. Colloid goiter diagnosed as hyperthyroidism elsewhere and thyroidectomy advised.

Fig. 3. Colloid goiter shows symmetrical enlargement of the thyroid gland. Thyroidectomy had been advised because of elevation of basal metabolic rate, nervousness and tremor.

fied by the work of the American Association for the Study of Goiter, by Henry Plummer and others. Whereas twenty years ago there was not a satisfactory text on goiter, today there are several. Metabolism machines were unknown before the World War except in the scientific laboratory; today their use is widespread throughout the profession.

As a result of this great increase in knowledge of thyroid disease, our diagnostic sense has become attuned to the point that long standing hyperthyroidism is becoming a rarity. The same is true of pronounced exophthalmos, thyroid crises, huge goiters, and other manifestations of neglect. Unfortunately, the pendulum is swinging too far and patients with possible incipient hyperthyroidism, nervous and physical exhaustion, and the menopause, are advised to have a thyroidectomy. Has not the time arrived to stop this? If one department of an institution can report one hundred such cases observed over a short period of time, the number sub-

the differential diagnosis of true and pseudo-hyperthyroidism; failure to elicit essential facts in the history; inaccuracy of the metabolism test or its interpretation; neglect in observing important physical findings; failure to try the iodine test; and the mistake of considering thyroidectomy an emergency operation.

If the important facts in the history such as weight loss together with an increased appetite, weakness in the knees on climbing stairs, pounding of the heart even at rest, heat intolerance, and emotionalism are not obtained, one should hesitate to make a diagnosis of hyperthyroidism. If physical examination reveals a normal appearing thyroid gland, and the absence of a thrill or bruit, together with a normal pulse pressure, hyperthyroidism should be excluded. Yet the mere complaint of tightness in the neck, so typical of nervous and physical exhaustion, large eyes, a full neck, a coffee or nicotine tremor of the hands, and a history of palpitation and insomnia, often seem to be sufficient to warrant

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a diagnosis of hyperthyroidism. Various remedies such as thyroid therapy, iodine, salves, x-ray, radium, beads, injections, massage, and thyroidectomy are advised.

If doubt exists as to diagnosis final judgment is often reserved pending the outcome of the metabolism test. Such evidently was the case in fifty-seven of one hundred patients in this study since the rate had been reported above normal. In one instance, the rate was said to have been plus 94 per cent. In another it was reported to have been plus 55 per cent, yet our metabolism studies in all these cases indicated a normal condition of the thyroid gland.

The metabolism test is responsible for many errors in diagnosis. The test may be inaccurate because the machine is obsolete or has leaks, or because the technician errs, or, most important, its interpretation may be incorrect. Food, rapid breathing, fever, and nervousness are other factors which lead to error. If the patient's nose is tightly pinched with a clip, he will breathe too rapidly and the test will register higher than it would under normal conditions. This frequent source of error is generally overlooked.

One should not allow his judgment to be misled by any metabolic report. Last week I saw a middle aged woman who had recorded a test of over plus 25 per cent on three occasions. This was similar to her record at another laboratory, yet I feel certain that the patient is not hyperthyroid. Certainly surgery is not indicated on the mere basis of these reports. This patient was sent home for a month's rest. If she is hyperthyroid, it will soon become evidenced by a loss of weight, increase in the pulse pressure and elevation of the metabolic rate. That will be sufficient time to think of surgery.

Two years ago a patient came from New York City to consult about a goiter operation which he had been advised to have. Much to his surprise and apparent disappointment, his thyroid gland was found to be normal and he was told that he did not need an operation, but was advised to have more recreation such as golf. Recently he wrote, "Following your advice, I have taken up golf, feeling at the time that I was more or less swapping goiter for golf. After the game I played today, I am not so sure I wouldn't just as soon have the goiter."

Before seeing a patient, certain points in the history are helpful in determining a diagnosis.

If he is under thirty years of age, the possibility of toxic adenoma can be eliminated because adenomas rarely become toxic in early life. A normal or only slightly elevated systolic pressure corroborates this tentative opinion. One must then determine whether or not he is dealing with a case of exophthalmic goiter. Probably 60 per cent of the patients whom I see in consultation have functional nervous complaints so that they already have two strikes called before I see them. Many complain of tightness in the neck and choking sensations which they believe are due to goiter. These are not typical symptoms of the disease, but those associated with a tense nervous system. This tenseness is often found in school teachers, stenographers, women at the menopause, and occasionally in business executives. It is intensified by repetition of tasks, by long hours of duty, by stimulants (particularly coffee), excessive use of nicotine, and by lack of rest, relaxation, and vacations. The tenseness of the nerves of these people may be likened to the sensation they receive when a rubber band is stretched tightly across their thyroid glands. What so many of them need is not the removal of part of their thyroid gland, but a change in environment.

It is exceptional if the history does not show that a loss of weight has been accompanied by a good or even ravenous appetite in exophthalmic goiter; whereas in patients with nervous or physical exhaustion, anorexia is the rule. The latter also are usually tired and pepless, while in the early stage of the former the reverse is true. When the patient walks into my office, I am interested in his actions. If he is restless, if he continually shifts his hands and feet about, and if he seems to forget things as soon as I say them, I suspect exophthalmic goiter.

Finally, when we come to the physical examination, the blood pressure findings are important. The presence of a low diastolic pressure is very suggestive of exophthalmic goiter, provided aortic insufficiency can be ruled out. Thrills and bruits are present in two out of three cases of Graves' disease after three months. They are not found in neurasthenia, physical exhaustion or even in toxic adenoma. The quadriceps test is of value in eliminating sources of error in diagnosing hyperthyroidism.

If the history and physical examinations still leave the diagnosis in doubt, if the metabolism

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test is plus 30 per cent or more, what should be done? The patient may be given an iodine test for ten days and if exophthalmic goiter is present, there should be a gain in weight and a lowering of the rate. As a further check, the iodine may be stopped, thereby aggravating the symptoms. That should be sufficient evidence to warrant a diagnosis of hyperthyroidism and surgical treatment.

Unfortunately our errors in the diagnosis of hyperthyroidism are not easily detected by the pathologist. In looking through his microscope, he is unable to tell us whether or not an adenomatous goiter is toxic or non-toxic. Moreover since the advent of Lugol's solution, an exophthalmic goiter which has been saturated with iodine may have all the gross and microscopic appearances of a colloid goiter. Careful search will usually reveal small areas of hyperplasia and infolding of the epithelium.

Errors in the treatment of hyperthyroidism are frequently attended with disastrous consequences. In spite of everything that has been said and written about the danger of the prolonged use of iodine in exophthalmic goiter, iodine-fast cases are still coming to surgery. The risk of operation is such that I seldom attempt anything but a two-stage thyroidectomy on these patients. Recently I had occasion to regret attempting even this much and, if given a second choice, would resort to a ligation, a procedure which I abandoned in 1925.

Since two out of three cases of toxic adenoma will improve on iodine, it should be given preoperatively as a routine. The cases not benefited will be only slightly affected in the short period of preparation.

Operative and postoperative complications such as laryngeal nerve paralysis, tetany, hemorrhage, pneumonia, and tracheitis will be lessened by the use of superficial cervical nerve block anesthesia. I have seen several fatalities which occurred following thyroidectomy for exophthalmic goiter where either through ignorance or mistake the patient was given insufficient amounts of iodine or none at all. This statement is made despite a recent article to the contrary by Davison and Aries.¹ A study of this treatise will show that they were apparently dealing in several instances with cases of toxic adenoma rather than exophthalmic

goiter. The postoperative use of iodine is of but small consequence in toxic adenomas. In 1923 I showed that iodine in considerable amounts was important in the immediate post-operative treatment of exophthalmic goiter in order to combat hyperthyroidism. In the treatment of a considerable group of cases since that time I have seen nothing to alter this opinion.

Toxic adenomas rarely recur following subtotal thyroidectomy, but the average rate of recurrence for exophthalmic goiter throughout the country is probably about 10 per cent. This is largely due to failure to remove sufficient hyperplastic tissue at the time of operation and lack of proper postoperative care. Iodine should be continued in small amounts for three months; coffee and other stimulants should be prohibited; there should be a return to normal weight within three months after thyroidectomy; activity should be somewhat restricted, and relaxation should be stressed. The progress of recovery should be gauged by metabolic tests. Observance of these factors will tend to curtail the number of disappointing end-results of surgery.

In conclusion, I believe that this report of one hundred cases of error in diagnosis emphasizes the importance of a careful study of patients suspected of having hyperthyroidism. Thyroidectomy should not be considered until such conditions as nervous and physical exhaustion have been eliminated, and hyperthyroidism has been proved to exist. Possible errors in metabolism studies must not be overlooked, and the iodine test should be tried in doubtful cases. Finally, I believe that the diagnosis of hyperthyroidism is a continual challenge to us as physicians and surgeons, and, in order to maintain our highest ideals, thyroid surgery should be performed only when it is truly indicated.

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SOME ATTEMPTED LEGISLATIVE SOLUTIONS TO THE PROBLEMS OF MEDICAL CARE*

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IT IS apparent that concerted efforts are being made in the United States to establish forms of medical practice totally at variance with the individualized practice of medicine, which has produced in this country a system of medical care unmatched elsewhere—unmatched not only in its scientific excellence but also in the universality of its distribution.

Some of the particular factors to which American medicine owes its eminence are obvious. We know, for instance, that individual initiative, unhampered by bureaucratic or political control, together with a reasonable prospect for making a decent livelihood for self and dependents, is an essential of scientific achievement in medicine as in all other fields of service. We know, also, that the relation of physician and patient has played a part of incalculable value because the practice of medicine is, and probably always will be, an art as well as a science. It will not, it can not, render its greatest benefit if it becomes merely a cold, calculating, impersonal application of scientific truths or half truths. Yet the legislative proposals made to change the form of medical practice would do away with these very essentials.

Let no one assume, because of the variety of proposals advanced, that American medicine has failed, that a vast proportion of our people are without adequate care, and that even an appreciable portion of the people are dissatisfied with the job American medicine has done and is doing. The fact, however, that there is really no public demand for change and that the revolutionary proposals emanate from a numerically insignificant, interested minority does not mean that there is no possibility of change occurring. Most unfortunately, in some respects, we are passing through such a tumultuous period of change in social concepts that legislative panaceas are advanced and accepted almost blindly without the consideration and the finer weighing of values that attend more normal times.

The proposals of change are so numerous and varied in type that only a few of the apparently more important can be discussed. This discussion, therefore, will be limited to a consideration of three general types of proposals or activities, contemplated or initiated: (1) compulsory health insurance; (2) legislation to permit corporations or other lay groups or individuals to engage in the practice of medicine; and (3) what for want of a better phrase may be termed invasion of the field of the private practice of medicine by governmental agencies.

Compulsory Health Insurance

Notwithstanding the agitation for compulsory health insurance by some students of the social welfare problem for the past twenty-five years or so, no state legislature was presented with a concrete proposal until after the Association for Social Security, Inc., Abraham Epstein, Secretary, brought forth late in 1934 a so-called model state bill for health insurance. This bill is believed to embody the general outline, at least, of any scheme for compulsory health insurance that will be pressed for consideration in state legislatures, for some time to come.

This bill, with certain minor amendments, was introduced but failed of enactment in 1935 in the legislatures of five states, in 1936 in two states, in 1937 in five states and the United States Senate, and so far in 1938 in three states.

Bills proposing systems of compulsory health insurance, founded largely on the Epstein philosophy but differing somewhat on details, were considered and killed in two states both in 1935 and 1937.

The so-called model health insurance bill in short proposes to create in each state a health insurance fund, to which all employees to whom the compulsory features of the bill apply, together with their employers and the state, would pay a total of 6 per cent of the wages paid and received. A person electing voluntarily to come under the act and the state would contribute a sum equal up to 6 per cent of the person's

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income, the percentage varying according to the benefits desired. The fund thus created would be used to supply to the worker and his dependents all manner of medical, hospital, dental and nursing services and the services of specialists, laboratories and clinics for preventive, diagnostic and therapeutic care.

The bill also provides for other benefits, such as the payment of cash during disability, but these will not be here discussed.

The compulsory features of the bill apply to all employees *except* (1) persons employed at other than manual labor and receiving in excess of \$60 a week in wages; (2) farm laborers, and (3) domestic servants. Almost any person whose net income is not over \$100 weekly and who is not covered by the compulsory provisions may for himself and dependents elect to come under the Act. The medical benefits may also be available to persons receiving old age or unemployment benefits.

Estimates as to what percentage of the population all of the groups just enumerated would constitute run from 70 to 95 per cent.

Some reference must be made to the administrative set-up of the bill for it ignores organized medicine and would seem to leave the individual physician and even the medical profession in a most impotent position without any authority in the administration of the law and powerless against the dictates and encroachments of political caprice.

The supreme administrative authority is a State Health Insurance Commission of five members, only one of whom would be representative of what the bill designates as the "Professions" and this representative, appointed by a political governor, might as well within the terms of the bill be a nurse, a pharmacist, a dentist, a hospital manager, as a physician. Acting in only an advisory capacity to this commission are a State General Advisory Council and a State Medical Advisory Council, on neither of which is the medical profession afforded adequate representation.

The act would be administered in local areas through local councils consisting of seven members, one of whom would be a local medical manager (an M.D.), the local health officer, and one representative of "the professions." With the exception of the local health officer, all members of the local council are to be appointed by

the lay-controlled State Health Insurance Commission.

A person entitled to medical benefits theoretically has the right to choose the general medical or dental practitioner he desires provided that practitioner is on a list of eligible practitioners compiled by the local council. The general practitioner chosen has the right to prescribe the specialist or laboratory or clinic services necessary for further treatment and the general practitioner or the specialist has the right to prescribe the necessary hospital treatment and nursing care, provided the persons or agencies selected are on the eligible list compiled by the local council. Every practitioner has the right to be included on such list. Names on the eligible list may be removed by the local council or by the State Health Insurance Commission, after written notice and hearing, "when in its operation continued inclusion in the list" would be prejudicial to the adequate, proper or efficient furnishing of the medical benefits." Whether the presence of this provision would prevent the arbitrary removal of a physician from the eligible list is debatable. A physician after a number of years of such practice and with a negligible private practice might well be at the mercy of political schemers.

The manner in which and extent to which persons and agencies on the eligible list would be recompensed could be fixed in each local area by the appropriate local council. In remunerating general medical and dental practitioners the local councils would be authorized to adopt either a salary system, a per capita system, a fee system, or any combination of the systems just enumerated. However, no system of remuneration could be inaugurated for any one local area unless a majority of the eligible general medical or dental practitioners, respectively, in that locality consented. This language means nothing, however, for it could be construed to mean a majority at the time the plan was adopted when a very few were on the eligible list and all subsequent additions would take subject to the existing plan.

The foregoing has been but a brief summary of such provisions of the Epstein bill as affect physicians. Without indulging in argument, it seems obvious that the long range effect of the enactment of such a measure would be to dilute and debase medical services to the public and

eventually to eliminate the high caliber and high purpose of an independent medical profession, leaving in its stead a group of practitioners, not physicians in any connotation the word bears today. Whether or not this bill or any one founded on a similar philosophy will ever become law in any state is debatable. Compulsory health insurance bills, however, will appear before legislatures for some time to come.

Practice of Medicine by Corporations and Other Lay Associations and Persons

Another threat to the quality of medical services has been legislative proposals, the effect of which would be to permit corporations and other lay associations and persons to exploit the services of physicians in the distribution of medical services to the public.

The past ten years have seen the rise of proposals ostensibly endeavoring to utilize the insurance principle in the distribution of medical services. Presumably so long as these proposals contemplate cash payments to the beneficiaries in the event of sickness or disability in order that they may themselves pay physicians they themselves have selected free from outside dictation the medical profession faces no apparent danger. However, when the proposal is for the insurance company or the medical service association, or whatever it may be called, to undertake, in case of sickness or disability, to supply the services of physicians of their own choosing, the situation is radically different.

Almost unnoticed, beginning in 1934, nine states have enacted laws authorizing the formation of corporations to operate on a so-called non-profit basis hospital service plans. Generally, these laws authorize such corporations to accept periodical premiums from subscribers and in the event the subscriber becomes sick or disabled to supply, either themselves or through hospitals with whom they have contracted, necessary hospital services. Some danger is inherent in such laws unless the term "hospital services" is limited to actual hospital services and the law as so limited enforced. In actual operation some of the plans authorized by these laws have infringed on the practice of medicine to varying degrees. Such laws have been enacted in New York, Alabama, California, Illinois, Maryland, Massachusetts, Mississippi, Georgia, and Pennsylvania. Similar bills were before the Minnesota legislature in 1937* but failed of enactment.

Bills which expanded on the theory by proposing to permit designated types of corporations and associations to operate hospital and medical service plans, were before six state legislatures in 1937.† None of them was enacted.

In some of our western states many plans similar to those just referred to have been in operation for years. The plans have been generally available only to workers in the employ of state corporations, industries, or governmental agencies and not to the public generally. In some sections, medical societies have attempted to operate similar plans because of the presence of commercial ventures in the field. On the whole, however, with a few notable exceptions, it would seem that even where such plans are in operation, by commercial interests or by medical societies, the public has not patronized them in appreciable numbers.

One of the most widely publicized attempts of a corporation to offer medical, surgical and hospital services on an insurance basis is now occurring in Washington, D. C., in the activities of the Group Health Assn., Inc., which was the recipient of an outright gift of \$40,000 from an agency of the Federal Government, the Home Owners Loan Corporation.

According to its certificate of incorporation, the corporation will render medical, surgical and hospital services to every subscribing employee and his dependents, of every branch of the United States government other than the personnel of the army and navy. It began the dispensing of medical care November 1, 1937, and by December 18, 1937, about 900 persons had subscribed to the plan.

Responsible officials of the Home Owners Loan Corporation say officially that a group of its employees organized the corporation and that the HOLC approved the scheme, believing that the HOLC would stand to benefit by reduced sick leaves if a complete so-called health service could be arranged for its employees on a basis of monthly pay deductions. Now as a matter of fact, the plan as it evolved embraced, if the articles of incorporation are any criterion, not only employees of HOLC but all other governmental agencies with the exceptions noted. And,

*S. 962, H. 1142.

†Calif. S. 121, A. 1283, S. 605, A. 1491; Ohio S. 204, H. 210; Oklahoma H. 335; Ore. H. 281, H. 283; Wash. H. 385, H. 386; Wis. A. 850.

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as a matter of fact, the HOLC did considerably more than approve the plan. It coöperated, if actually it did not instigate the whole business, and without the aid of the HOLC it probably could not have come into being.

In March, 1937, shortly after the corporation was organized, the HOLC entered into a contract with the Group Health Association by which the HOLC agreed to give \$40,000 spread over more than a two year period to the association and the association agreed to operate a medical service plan that would include employees of HOLC and would provide by-laws satisfactory to HOLC, which by-laws would provide that two of the association's directors be named by the Federal Home Loan Bank Board and that those two directors would be members of an executive committee of five of the association's directors. Rather active approval. Now while the association did not begin to dispense its medical care until November 1, 1937, all the \$40,000 had been handed over to the association prior to that time. This haste was due probably, at least in part, to a premonition that the appropriate Congressional committee which would pass on appropriations to the HOLC might not feel favorable to diversions of public funds of that sort. And so it developed. The theory by which the HOLC sought to justify this diversion of public funds met strong criticism from members of the subcommittee of the Committee of Appropriations, House of Representatives, in a hearing held on December 18, 1937, on the Independent Offices Appropriation bill for 1939, when this whole matter was under discussion.

In any event, it would seem that the activities of GHA are illegal for two reasons: (1) they constitute the practice of medicine by a corporation, which the law forbids; and (2) they constitute the doing of an insurance business without complying with the laws of the District of Columbia which permit insurance companies to operate only when licensed by the Superintendent of Insurance after complying with certain requirements of law, among which is a requirement of a deposit of certain funds. This conclusion was reached by the corporation counsel and by the district attorney of the District of Columbia. Furthermore, the Acting Comptroller General of the United States, Richard N. Elliott, on December 17, 1937, ruled that the HOLC

acted without authority of law in disbursing the \$40,000 to the GHA.

There the matter now rests. Nevertheless the Group Health Association continues to operate in open defiance of law. Unless curbed, it can, if it expands to include all eligible persons, practically destroy the private practice of medicine in the District of Columbia. Whether it will do so and whether its activities will eventually encompass the United States, as they well can, are questions that only the future can answer.

Practice of Medicine by Governmental Agencies

A third, and possibly the most menacing, threat to the private practice of medicine are proposals for the governmental assumption of some or all of the functions of the practice of medicine and the rendering to some or all of its citizens necessary medical care free of charge or at such reduced rates as will preclude the co-existence of an independent body of medical practitioners.

In the past we have seen the development of state medicine to a limited extent. Probably the expansion of state health departments in the field of preventive medicine, and the care afforded mental incompetents, the tuberculous, and to some of the poor can be so classified. In many states, also, state or county general hospitals are in operation and there has been a constant effort to expand such facilities and to enlarge on the classes of population eligible for treatment therein.

Proposals put to the legislatures and the Congress in the last few years and the actions sought to be authorized by governmental agencies are continually going further and further into the field of the practice of medicine. Consider, for instance, the Lewis bill introduced in the U. S. Senate July 22, 1937,* which sought to make all physicians civil officers of the Federal Government, to require them to attend any "impoverished individual" on request and to authorize them to make such charges as "are just and reasonable," which charges were to be paid by the Social Security Board. That bill is still pending but is believed to have no chance whatsoever of enactment.

Reference should be made here to the rendition of the services contemplated by the Federal

*S. J. Res. 188.

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Social Security Act, namely, care for crippled children, maternal and child health services, and state and public health services. Fortunately the services contemplated have been rendered to date in a most ethical manner, after consultation with and in accordance with the advice of the organized medical profession. But the possibility of abuse is always present so long as any portion of those services is subject to lay control. In this connection, too, vigilance must be unremitting in the enactment or enforcement of state laws designed to enable a State to avail itself of the federal subventions preferred in the Social Security Act. There have been isolated proposals—I believe one was pending before the Minnesota House in 1937—to permit a lay agency to supervise or administer the distribution of the medical services called for by the act.

The administration of medical aid to the clients of the Rural Resettlement Administration, now the Farm Security Administration, has aroused considerable comment. The practice varied from State to State. It almost seemed that in those States in which the state medical society was alert no objectionable practices were instituted and the plans that were put into operation were often the result of consultation with the medical society. Elsewhere attempts were made to care for the medical needs of the relief clients on a contract basis with individual physicians or groups of physicians. This, obviously, would deprive the patient of free choice of physician. In several States attempts were made to set up medical co-operatives which seemed objectionable because the terminology employed in the articles of incorporation of some of these co-operatives was so broad that (1) it would permit a much greater group of the inhabitants of the State in question than the relief clients to avail themselves of the medical care it offered and (2) it would enable the co-operative to supply the services of physicians rather than pay for them. Whether the co-operatives actually will do more than pay for medical services rendered FSA clients is a question for the future to determine.

In some states repeated efforts have been made to enact legislation to permit the admittance to various types of governmental hospitals of all persons needing medical care, regardless of indigency or non-indigency, on the payment of fees determined by the governing board.[†]

[†]1937 Calif. SCA 5, A. 1196; Nev. A. 187; Idaho S. 169.

The possible consequences of the enactment of such legislation are not hard to imagine. Within the very recent past in one county in a western State the county general hospital became a political football. Certain members of the board of county commissioners, which appointed the hospital board, stood for re-election on a platform of free medical and hospital services for all and a campaign of vituperation was conducted against the county medical society, which quite naturally opposed the scheme. The matter was eventually settled in the courts and the hospital board was enjoined from caring for others than indigents.

Bills have been considered recently in several States, which, if enacted, would have certainly socialized the practice of medicine and put it under governmental domination more complete than any proposal heretofore alluded to. Some of these bills contemplated nothing more or less than the creation of a separate department of state government to render free medical, dental and hospital care to all residents.* Two of the bills proposed[†] that all physicians in the State treat patients under the direction of the designated State department, each physician being paid a monthly salary based on the number of years he had been licensed. A bill recently considered in South Dakota[‡] sought to authorize county commissioners to levy a tax sufficient to pay for necessary medical, surgical and hospital care for all residents of their counties. A resident was to be at liberty to choose any physician or hospital he desired and the county would pay the bill in accordance with a definite fee schedule which made none of the distinctions on which prevailing medical charges are made.

There is an increasing tendency to compel the state to arrange for and supply the necessary maintenance, medical and surgical treatment, and hospitalization for indigent expectant mothers. Such a law was enacted in Nevada in 1935 (c. 171) and was considered and killed in several states in 1937. Such a law is not objectionable, of course, if it provides free choice of physician, affords reasonable compensation to the physician chosen, and if its administration is limited to indigents.

Falling in the category of legislative proposals

*Wash. (1935) H. 583, H. 580; Mass. (1930) H. 351; N. Y. (1938) A. 2143.

†Wash. (1935) H. 583; N. Y. (1938) A. 2143.

‡H. 201 (1935).

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discussed in this paper are a series of bills introduced in the Wisconsin Assembly in 1937 by Assemblyman Andrew J. Biemiller of Milwaukee. One bill so introduced (661A) sought to create an interim committee "to investigate the general subject of medical care and the ways and means of lightening the burden thereof." Another bill (662A) sought to authorize the formation of non-profit corporations to operate group hospitalization plans. Another bill (740A) proposed to make it the duty of the county boards of supervisors in each county to provide "medical, dental and hospital services and treatment for all poor persons receiving relief in said county." Still another bill (747A) proposed to authorize the common council or board of any political subdivision to "subsidize wholly or partially a physician or physicians whenever there shall be an insufficient number of competent physicians in their respective communities." Such physicians were to "work under the direction and rules of the common council or boards affected." Another bill (850A) would have permitted the creation and operation of so-called medical coöperatives and proposed to prohibit medical societies from disciplining such of their members as supplied services to a coöperative and to forbid hospitals from discriminating in any way against physicians coöperating with

such groups. Finally, one bill (852A) embraced a compulsory health insurance scheme based largely on the Epstein philosophy but which did not propose to confer anything but medical, dental and hospital benefits. None of these bills was enacted.

These, in brief, are a few of what may be termed preferred legislative solutions to the problems of medical care. Not one of them, it is submitted, even approaches a partial solution to that problem. No solution, it can be asserted confidently, will be found in any plan that in any way debases the medical profession, for the quality of medical services is of primary importance. The medical profession, it would seem, must fight not only to maintain its own independence, integrity, and high standards, but also to see to it that the public is not cajoled into accepting a form of medical practice that in destroying an independent and capable profession will leave in its place an incompetent group of servile practitioners bringing with them a retrogression in medical progress and medical care. The American public must not be placed in the situation Æsop depicts in the fable of the dog which dropped his bone for a seemingly larger and more delectable one reflected in the water below him.

FOOD SENSITIVITY SIMULATING GASTRO-INTESTINAL DISEASE*

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DURING the past several years the medical profession and even to some degree the lay public have become conscious of the fact that food idiosyncrasies may be at the basis of some of the ill defined, indefinite symptoms referable to the gastro-intestinal tract. Great advances have been made in the field of allergy, since the observations on anaphylaxis by Richet of France. The proof that hay fever was caused by the protein fraction of pollen soon followed and, in the natural course of investigation, the food proteins came in for consideration so that the cause for many obscure cases of food poisoning was now found. Under the leadership of Coca, Duke, Rackemann, Vaughan, and many others, the treatment of these cases of allergy

was soon started, so that today the sufferer may in a large percentage of cases acquire some and even complete relief from his distressing symptoms.

The diagnosis of food sensitivity is not always easy. Perhaps the earliest and certainly one of the most reliable tests has been the patient's own experience with the production of symptoms on eating the offending food. This has been most apparent in those cases where eruptions on the body or urticaria have resulted after the ingestion of, or contact with, the material at fault. However, when asthma, eczema, or similar allergic manifestations are present, it is rare that the individual himself recognizes the importance of foods as the causative factor. Moreover, this is even more true in cases where

*Read before the Northern Minnesota Medical Association at Virginia, Minnesota, August 27, 1937.

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foodstuffs have been found to be the offending material in the production of gastro-intestinal symptoms and so often the symptoms are ascribed to other, non-allergic, often vague diseases of the digestive apparatus.

The value of the scratch and intradermal tests in searching for the cause of the underlying sensitivity is at present open to some question. Care should be used in their interpretation, because a positive reaction may not mean clinical allergy and, by the same token, a negative test may be present when the offending material may produce clinical symptoms. Alexander¹ and Vaughan¹¹ have thrown some light on this subject and state that the gastro-intestinal tract, bronchi, or other reacting tissues of the body may alone contain reagins, whereas the skin may contain none, and hence negative tests result. Furthermore, the age of the patient and the technic of testing as well as the site of the application may cause variations in the test.

The skin test, however, should not be disregarded, for in some instances at least, it may give a lead to further study. The trial by diet, the so-called elimination diet, has assumed a greater importance in the diagnosis of this problem. Rowe^{8, 9} in several reports has gone into detail discussing its value, which has since been corroborated by many writers. There are further means of diagnosis, namely the passive transfer test, and the leukopenic index as presented by Vaughan.¹² The latter test is of definite value in some cases^{7, 10, 12, 13} though the results must be interpreted with caution.⁵

In the present report, a study has been made of individuals giving evidence of food allergy with symptoms referred to the gastro-intestinal tract. Many of these cases had been previously studied and treatment instituted, often without relief. These symptoms were such as to simulate other conditions, viz., duodenal ulcer, gall-bladder disease, acute gastro-intestinal disturbances, spastic or irritable colon, etc. For convenience in illustrating these symptoms, the following case reports are presented:

Cases Simulating Upper Gastro-Intestinal Disease

Case 1.—J. B., male, aged forty-five years. His chief complaint was discomfort in his abdomen, particularly a few hours after meals. In 1927, he was informed that he had a duodenal ulcer, though several roentgen-

ray studies failed to reveal any ulceration of the upper gastro-intestinal tract. His diet was varied, though he had abstained from fatty foods. Vegetables caused no discomfort, but highly seasoned foods did. The principal foods were quantities of milk, eggs, beef, and bread. The usual powdered medication used in the treatment of ulcer gave no relief from symptoms.

For many years past he had had mild attacks of hay fever and there was a history of allergic disease in his family.

The physical examination was essentially negative except for moderate tenderness upon palpation of the epigastrium.

Scratch and intradermal tests were given and showed markedly positive reactions to milk and eggs and a two plus reaction to beef and black pepper. The articles were then eliminated from his diet with complete relief of symptoms. When eggs and milk were again restored to the diet, the symptoms of abdominal distress returned, and since then these have been entirely withdrawn from his food intake.

Case 2.—Mrs. F. H., female, aged thirty-six years, complained of an acute onset of nausea, vomiting and acute upper abdominal distress, which she believed resulted from taking a small amount of fermented liquor the evening previous. Further investigation revealed that she had never taken milk or eggs except mixed with other cooked foods, but that during the past few days she had taken a glass of milk each evening.

In the past she had had several spells of less severity on rare occasions. There was no history of allergic disease in her family.

Physical examination revealed nothing except some abdominal distention. Intradermal tests were made with extracts of various foods and a three plus reaction to milk and a two plus to eggs resulted. These substances were accordingly eliminated from her diet.

She recovered promptly from her illness and found also that fermented liquor did not cause return of any symptom. On one occasion she was ordered to take milk with her diet and then had a return of epigastric discomfort. Since avoiding these food materials she has since been free from any gastro-intestinal symptoms.

Case 3.—Mrs. A. H., aged thirty years. The chief complaint was vomiting, epigastric discomfort and headaches of the migraine type, which would disable her for three days at a time every few weeks. These had been present for years, and the headaches relieved only temporarily by medication. There was no history of allergic disease in the family, but her mother had suffered from headaches.

The physical examination was entirely negative. Elimination diets were tried after intradermal tests had shown a markedly positive test for milk, and lesser reactions (two plus) to bananas, cabbage, and black pepper. Milk elimination stopped the above mentioned symptoms. An oral desensitization diet for milk ac-

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cording to Kesten and Hopkins⁴ was tried, but when this was half completed, she had a return of headaches and gastro-intestinal distress. Complete elimination of milk alleviated all symptoms.

In January, 1937, she was delivered of a child, which she began to nurse. Headaches and nausea of milder degree returned, lasting only one day. She last reported that these seemed to lessen slightly, but it is probable, that they will not be completely eliminated until she has stopped nursing her child.

Cases Simulating Acute or Chronic Disease of the Colon

Case 4.—Miss E. C., female, aged twenty-five years. Her chief complaint was pain in the right and mid-epigastrium, alternating spells of diarrhea and constipation. She had been chronically ill for many years. In 1932 a retrocecal appendix was removed and in 1935 a gallbladder without stones but with a few adhesions was taken out. Symptoms still persisted despite the many varied forms of medication given. There was no family history of allergic disease.

Examination showed a somewhat undernourished young woman. There was tenderness on pressure in the right epigastrium and along the descending colon on the left side. Roentgen-ray films revealed a moderate degree of viscerotaxis and a spastic colon.

Scratch and intradermal tests showed a positive reaction to many foods, particularly tomato, pork, and carrots (three plus). The reaction to milk was only one plus. Because of the severity of the symptoms, elimination diets were tried. Among the first foods eliminated was milk. During this period, the symptoms of pain in the epigastrium were greatly alleviated and the bowel function returned to normal. However, because she was not gaining in weight, goat's milk was added to her food intake. For a period of two months she was fairly comfortable, but in June, 1936, diarrhea again set in with fifteen to twenty movements per day. Hospital treatment was instituted and goat's milk was removed from the diet. The diarrhea subsided within a few days and since then she has not been troubled in this way. Tomatoes and citrus fruits caused return of epigastric distress, but elimination of these alleviated the symptoms to a great degree. Soy bean milk has been used to replace milk and she has regained six pounds in weight. At present she is comfortable unless she experiences mental strain, when a mild diarrhea sets in for a few days.

Case 5.—Mrs. R. MacG., aged thirty-one years. For years this patient had been troubled with gastro-intestinal distress and she stated she had to be "fussy" with her diet. She had spells of what she called colitis, with pain particularly over the descending colon. In 1934 symptoms of pain in the pelvis were complained of and examination revealed a mass in the left culdesac. At operation endometrial tumors were found and removed and a chronically inflamed appendix was taken out. However, she still complained of food difficulties and roentgen-ray studies revealed a spastic colon. She did not receive much relief from treatment.

In May, 1937, she complained of discomfort after eating, stating that she believed her trouble was due to poisoning from food stuffs. She always felt tired and at times had much distention of her abdomen. At these times palpitation of her heart would set in and the pulse rate increase to 140 or 150 beats per minute. Her stools were watery and loose, but sometimes stringy with much mucus. She believed meat and eggs caused most of her trouble.

Examination was negative except for tenderness in the epigastrium and left flank of the abdomen. Scratch and intradermal tests revealed a three plus reaction to milk, two plus to wheat, rye and white potatoes. These were removed from her diet with complete relief of symptoms. Oral desensitization diets were given and after a few months she was able to eat small amounts of bread without discomfort. She has never been able to partake of milk without return of symptoms.

Discussion

The symptoms presented by these patients are common in many non-allergic diseases of the gastro-intestinal tract. In determining the underlying etiological factor causing these complaints, careful attention to the history is essential. Often there is a history of hay fever, as in Case 1; or a familial history of allergic disease may be obtained, which will give a clue to the diagnosis. A careful evaluation of the diet list may reveal some new food recently added to the list and may be the material at fault as in Case 2. Moreover, it is not uncommon for these sufferers to have widely varied medical treatment, even undergoing operation without relief of symptoms. In cases suggestive of ulcer or cholelithic disease, the absence of positive roentgen-ray findings may be the determining factor in stimulating the physician to resort to the study of possible allergic factors.

The dislike for foods very often has no relation to the allergic food factor at fault and even the patient's own statement that certain foods are disliked or cause distress may or may not contribute to finding the cause, as in Case 2. So often the offending food comes as a complete surprise not only to the patient himself, but also to the physician. The foods that are most commonly used, such as milk, eggs, wheat, or tomatoes, are most often the causative factors in a series of cases studied. Alvarez^{2, 3} has discussed this problem at length with a careful analysis of symptoms and their

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relation to food sensitivity and has come to the same conclusions.

These selected cases also show that too much reliance should not be placed on one method of diagnosis alone, but that the elimination diet or diary diet of Alvarez should be resorted to in these individuals. This is well illustrated in Case 4 where the intradermal test was only very slightly positive, but there was clinical evidence of severe sensitivity to milk as proven by the test diets. Here the gastro-intestinal tract was the shock organ, so to speak, and the skin showed only slight sensitivity. Thus it is evident that the patient should be given the benefit of the test diets, for with those sensitive to many food stuffs, the diet list may be cut down too much for the patient's own welfare, even to the extent of making his food intake lack both in the amounts and kinds of food material necessary for well-being.

Patients 3 and 4 present an interesting study in antigenically related substances, in this case milk. Ratner⁶ has studied this problem and suggests that milk derived from the various species of animals may be antigenically related. In patient 3, there is a probability that the symptoms of nausea, vomiting, and migraine headaches may be due to her own milk. Patient 4 did well after the removal of cow's milk from her diet. However, she used goat's milk for two months and then severe gastro-intestinal symptoms appeared. They were relieved only by removal of this article of food from her diet. In this case we can assume that there was a

relation between cow's and goat's milk to produce allergic symptoms.

Summary and Conclusions

1. Case reports have been presented to illustrate that food sensitivity may often simulate organic gastro-intestinal disease.

2. Too much reliance should not be placed on a single method of diagnosis, such as the scratch test, but a careful history of previous allergic disease should be obtained and then the elimination or diary diets together with other methods of diagnosis should be used.

3. This is even more necessary in those individuals positive to many substances by the scratch test, because too limited a diet may deprive the patient of food elements necessary to the proper sustenance of life and well-being.

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THE DANGERS OF LATE DIAGNOSIS OF INTESTINAL DISEASES*

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SOME of the most serious lesions of the human body are found in the large intestine. Their early diagnosis, therefore, is imperative. It is my purpose in this paper to call attention to some of the more common symptoms, signs, and methods of early diagnosis of intestinal disorders.

Any change in bowel function should suggest

*From the Division of Medicine, The Mayo Clinic, Rochester, Minnesota. Read before the Northern Minnesota Medical Association, Virginia, Minnesota, August 27-28, 1937.

the possibility of intestinal disease. Sometimes such a change may be very slight, for when one considers the nature and contour of the large intestine, a lesion may grow to considerable dimensions before it produces a change in the intestinal habits. In an individual whose bowel movements have always occurred at a regular time of day, therefore, any irregularity in going to stool may be an early symptom of intrinsic disease. Another common early complaint is

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fragmentation of the stools, and where formerly an individual may have had one normal, formed stool, he may suddenly have three or four small ones, and he may not seem to be able to empty his bowel completely except after repeated small passages.

Gaseous dyspepsia and bloating are common complaints, and indefinite abdominal discomfort, which may or may not follow the line of the large intestine, occurs frequently. The passage of intestinal mucus may or may not signify a lesion in the intestine. Without doubt much too much attention has been paid to mucous discharge from the rectum. Too often it has been called evidence of colitis without a thorough investigation. More often than not it is simply the result of a type of systemic irritation in which the intestine is affected reflexly. However, it is not possible to establish this fact without proper objective investigation. Hence, when unnatural quantities of mucus are passed, a thorough study of the intestine should be made to establish the possibility of an early organic lesion. The passage of pus is indicative of some type of inflammatory disease.

Blood in the stools should always be considered of serious moment until proved otherwise. It is easy to blame the passage of blood in the stools on the presence of hemorrhoids. It is much safer to consider the presence of blood as due to a neoplastic lesion until proof to the contrary is available.

The development of constipation in an individual who has otherwise had normal bowel function should also be considered of significance. Constipation, of course, is more often due to functional disorders than to actual organic disease, but one should never be satisfied to say

that the constipation is of a functional nature unless every effort has been made to prove the contrary. Unexplained loss of weight may be associated with early intestinal disease. The pallor seen in individuals with slowly progressing anemia is rather characteristic, particularly in cases in which the lesion is in the right half of the colon. Then, too, among patients who have had chronic ulcerative colitis (*colitis gravis*) for some time there develops a peculiar pallor which was originally described by Logan as that of "visceral degeneration." Innumerable nervous disturbances may also be associated with intestinal disorders, often to the point of depression, and the old saying of Osler that "disease above the diaphragm makes for optimism and that below the diaphragm for pessimism" well expresses the situation. These and many other symptoms may be taken as early expressions of intrinsic intestinal disease.

When satisfied that a patient's complaints point to a disturbed function of the intestine, a very careful physical examination should be made, and this in detail often gives valuable information. Probably the most important part of the physical examination is a careful examination of the rectum. A general examination of the chest and abdomen often gives valuable and sometimes unexpected information. A well-planned and well-ordered set of objective tests, including examination of the stools, x-ray studies of the large intestine, and the direct inspection of the bowel lining through the proctoscope, has the greatest value.

If this plan of study is followed, many of the serious lesions found in the intestine will be diagnosed early and at a time when their complete eradication is possible.

Vitamin D Milk Produced by Feeding Cows Irradiated Yeast

In 1929 Wachtel reported that the feeding of irradiated dried yeast to cows resulted in the secretion of vitamin D in the milk. This report was confirmed and amplified by the observations of Hart and Steenbock and their associates at the University of Wisconsin. Since 1932 this type of vitamin D milk has been made commercially available. The product is sometimes referred to as "metabolized" vitamin D milk. Numerous investigators have reported on the clinical effectiveness of metabolized vitamin D milk. These investigators have shown that, if there is any difference, unit for unit, between different types of vitamin

D milk, the difference is too small to be of practical significance. Metabolized vitamin D milk is produced under the joint sponsorship of Standard Brands, Incorporated, and the Wisconsin Alumni Research Foundation. The irradiated dried yeast intended for use in the feeding of cows may be sold by Standard Brands, Incorporated, only to dairymen licensed by the Wisconsin Alumni Research Foundation. The vitamin D content of the milk produced, as shown by repeated bioassays, is not less than 400 units of vitamin D per quart. The Council on Foods voted to accept pasteurized metabolized vitamin D milk and to grant the use of the seal of acceptance to licensed dairies that conform to the Rules and Decision of the Council (Jour. A.M.A., Nov. 27, 1937, p. 1814.)

COMPARATIVE VALUES OF INJECTION AND SURGICAL TREATMENT OF HERNIA*

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PREVIOUS to the last decade, injections for the cure of hernia attracted little attention. The solutions of Pina Maestrae of Spain were handled with great secrecy and in this country sold at such high prices that they had been little used. Mayer of Detroit was using the injection method long before he gave medical publicity to it. Bratrud of Minneapolis, together with McKiney, Rice, and Larson, deserve credit for taking the matter up in a clinical teaching way and giving the profession solutions, methods, and the results of their experience.

It is estimated that 10 per cent of the population have herniae in some form or other. The majority, influenced by economic considerations, necessity of hospitalization, objections to surgery and recurrences after operation, prefer to wear trusses. The tendency now is for active treatment to be sought earlier.

Inguinal hernia comprises most of the cases selected for injection because trusses are fitted more easily, and, anatomically, the injections are simpler. The direct inguinal type gives more difficulty than the indirect because of gravity and also because the structures of the internal and external oblique muscles are often frayed out or almost absent. Evidences of this are the many surgical devices used, such as fascia lata strips from the thigh, turning down of fascia from the rectus muscle or incision of the fascia of the internal oblique near its attachment to the rectus muscle so as to free the internal oblique for approximation to Poupart's ligament. Direct hernia becomes more frequent in later life. Age presents poorer reacting qualities, hernia of longer duration, degenerative changes, often increased fat, and the protruding abdomen placin^g the inguinal hernia more at the bottom of a sack. The number of injections needed increases with each decade of life, and many more are usually needed with direct than with indirect inguinal hernia. The same factors necessitate more careful surgical procedure with direct hernia.

Is injection likely to damage the spermatic

cord or the circulation of the testicle? Before any treatment, surgical or injection, the status of the cord and testicles should be carefully noted. Variation in size may be developmental or due to illness, such as mumps, or it may follow operations. I am injecting a dentist who suffered marked testicular atrophy following an operation and, with hernial occurrence on the other side, he has selected the injection method. The spermatic cord is very resistant to any needle implantation. The younger the individual, the more resistant the elements of the cord are. The thickness of the wall of the cord on section is many times greater than the lumen. Records of potency, semen examinations, findings at such operations as may be necessary following failure of the injection method, and post-mortem examinations in operated and injected individuals will ultimately determine comparative risks.

Femoral hernia, if reducible, may lend itself to injections. Femoral hernia occurs jointly with inguinal hernia more frequently than is usually suspected. Sometimes it is not noticeable until the inguinal hernia has been corrected by operation or injection.

Umbilical hernia, if small and free from any abdominal contents, may be treated by injections.

Post-incisional abdominal hernia, if small, may occasionally be closed by injections. One difficulty is that often this type of hernia may have multiple points of weakness. In the upper abdomen, because of the presence of the mesentery and liver, there is less chance of the development of bowel adhesions and hence injections are safer above the navel than below. Unless very minute and treated early, post-incisional rectus muscle and midline herniae below the navel are positively surgical.

Recurrences in inguinal hernia following operation often lend themselves to control from injections. Previous operation has rearranged the tissues so that injections may fill in weak spots more readily.

Before injections are made, a satisfactory truss must be fitted. No one type fits every kind of hernia. A spring bar is most efficient in the in-

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guinal type. In umbilical and incisional hernia, trusses with attachments encircling the body are used. The truss may have to be adjusted repeatedly. The surgeon should fit and closely observe the truss. The truss must function positively to hold the hernia. For the discomfort and chafing present at times, a buffer cloth between the truss and skin is helpful. Toughening of the skin with alcohol and dusting powder is useful. The truss is worn night and day to begin with and preferably so during the injection period. After apparent cure, it should still be worn two to six months longer, depending upon the type of hernia and the difficulty in securing healing. Then it is left off at night only and later during the day unless special strain or activities are undertaken.

Next comes the choice of the irritant to produce a foreign body granuloma—microscopically, a proliferation of endothelial and connective tissue cells forming scar tissue. Many solutions are being used, and this fact in itself is evidence of the still unsettled question as to which solution is best. Of the many in use, I have had experience with five.

1. *Thuja Mixture*

Phenol, 50 parts.

Alcohol, 25 parts.

Lloyds Specific Tincture of Thuja, 25 parts.

Allow to stand two days and then either decant or filter.

Except for a half dose at the internal ring, an average of eight minims is injected at each treatment. A tuberculin syringe is used. With such a small quantity of solution only a small area is affected, necessitating a greater number of injections. The Thuja mixture is its own sterilizing agent and needs no preliminary novocain for anesthesia.

2. *Mayer Formula*

Zinc Sulphate, 1 dram.

Glycerin, 4 fluid drams.

Fluid Extract Pinus Canadensis (dark), 5 fluid drams.

Phenol Crystals, 6 drams.

Aqua Cinnamomi, 1 fluid dram.

Sterilized chemically pure redistilled water, 2 fluid ounces.

The solution must be brought to boil each time before it is used. The average dose is eight minims.

3. *Bratrud Formula*

Tannic Acid 0.50

Benzyl Alcohol 3.00

Thymol 0.50

Alcohol (95%) 100.0

This product is suggested by Dr. A. Bratrud of Minneapolis. The tannic acid may be increased to 1 per cent in selected cases. Its advantage is that a larger amount can be used, probably on the average of 2 c.c. It is preceded by 1 c.c. of 2 per cent novocain. Bratrud adds two minims of Thuja mixture. All solutions are given through the same needle with change of syringes. The larger amount of solution gives a reaction over a larger area.

4. *Sodium Morrhuate*

This solution was suggested by Dr. D. D. Turna cliff of Minneapolis. I have used 2 c.c. of the solution preceded by 2 c.c. of 2 per cent novocain and followed by 1 c.c. of novocain. I have limited its use to the above dosage in difficult cases in which other solutions had previously been used. In my experience, with the dose mentioned, it gave the most marked reaction of all and therefore should be used with caution. I have seen no other reports regarding its use.

5. *Sodium Psylliate*

Of late I have used a sodium psylliate preparation. It causes no damage if spilled on the skin, the reactions are certainly less marked and, experimentally on animals, the reaction even on the peritoneum is reported mild. In cases which are difficult to close, I am inclined to return more frequently to solutions of greater reaction, such as Bratrud's formula, sodium morrhuate, or Thuja mixture.

For injection of an inguinal hernia, the patient is placed on a table with the hips elevated. Alcohol (70 per cent) is applied to the skin area. The approach to the region of weakness is through skin, fat, and fascia. The resistance of the fascia is definite. When the needle is passed through the fascia, freedom of motion of the needle is evident. An attempt should always be made to withdraw the piston of the syringe, to insure avoidance of vessels. The patient's reaction to pain also guides in the placement of the needle. The injection should be immediately stopped with any unusual reaction. It should be

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given slowly. Repeated injections are placed in various areas of the inguinal canal according to the reaction obtained and points of greatest weakness. The nearer the internal ring, the more need for caution.

The frequency of injection depends upon the reaction, upon the number of areas needing injection and, to some degree, upon the convenience of the patient, particularly an out-of-town patient. The injections range from daily to weekly injection, usually allowing a week to elapse between injection of each area. Reaction in the form of swelling is encountered. I have seen none that has not subsided. I have not encountered infection.

In umbilical hernia, the defect is approached from all sides, dosage at any point being from one-quarter to one-eighth of that used in inguinal hernia. The peritoneum should not be penetrated. In femoral hernia, the dosage is about one-quarter and the approach is made with great care. Incisional herniae, except in the inguinal region, are approached with much caution.

There are many interesting reports in literature. Pina Maestrae of Spain reports favorably on 8,000 cases.

Mayer of Detroit states that in his work a census of 2,100 cases of inguinal, femoral and umbilical hernia by subcutaneous injection showed complete relief without recurrence after a period of years in 98 per cent of the cases. Furthermore, more than 200 cases of hernia recurring after operation were subsequently completely relieved by the subcutaneous injection method.

Bratrud and McKinney at the University of Minnesota Hospital, and Rice and Larson at the Minneapolis General Hospital have given favorable reports on large series. This work at the University of Minnesota is especially to be commended because of the spirit of open-mindedness shown, and also because of the scientific approach and willingness to teach. Samuel W. Fowler of New York City has recently reported several hundred cases. Total reports now from all sources are large.

During the years 1933 and 1934 in a private practice trial, I operated upon thirty-eight patients and injected forty-two. Since then over two years have elapsed. Patients treated since 1934 are too recent for evaluation. Of the in-

jection cases, thirty-seven were inguinal hernia, two were incisional, one umbilical, and two femoral. Of the thirty-seven inguinal, four had, in addition, femoral ring impulse; hence, both areas were injected. Two of the inguinal group had marked hydroceles which were treated also. Three of the injected cases were surgical recurrences, one of which had had three operations, and another two operations. These operated cases reacted well as the operations had left smaller areas of weakness for closure.

Of the operated patients, two had undescended testicles, two had marked testicle atrophy from mumps (one unilateral and one bilateral), five had femoral herniae and six had post-incisional herniae. The remaining twenty-three of the surgical group were inguinal herniae.

Certain difficulties were encountered.

1. Severe enough reactions to cause the patient to lay off from work. The first was a laborer doing exceptionally heavy lifting and to whom I gave the largest dose of sodium morrhuate I ever used at one injection. He had the most marked reaction of my series. His lay-off lasted one week. He had a closure of the hernia following the severe reaction and has since referred a patient to me. The second was an older man who complained much of the character of his work. Besides compensation, he had other sources of insurance income and had it not been for the character of his work and also for his insurance, I feel that he would not have laid off at various times for a total of several weeks. Three other patients laid off, missing part or all of a day from work. Since using sodium psylliate, none has laid off from work. Reactions have been much reduced, but I am of the opinion that more injections are required than with the other solutions.

2. The most difficult herniae to close were in four patients, all old men with long standing, large, direct herniae. Two I have operated upon after prolonged injections. Adhesions were marked from the injections, but operation was not more difficult than expected. One of the two tired of injections and suggested operation himself. Another I apparently closed with forty-four injections but the hernia reopened. I have advised operation, which he may accept, although he still comes for injections. Another

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has had thirty-nine injections and progress is very slow. He comes occasionally for injections. The advice I would give generally for hernia of this type is plastic repair. Others of this type, which apparently closed, will have to be injected again from time to time for recurrences or they may come to operation by me or drift into other hands, if they have not already done so. Observance for recurrence should be repeated regularly. Extra injections after apparent closure are necessary to improve results.

3. Swelling in the tissues accompanying the cord does occur at times with all the solutions mentioned except sodium psylliate. It has always subsided, however, in my experience. Twice I removed fluid from the center of the reacting mass. Patients become somewhat disturbed over such swellings and must be reassured.

4. Pain results from proximity to the nerves or to the peritoneum. In such cases the needle must be reinserted.

5. Influx of blood with a preliminary withdrawal of the piston, previous to injection, has occurred several times. The needle was promptly withdrawn and no complications followed. If the withdrawal had not been made promptly, trouble might have followed.

6. With patients who are unusually temperamental and highly sensitive to any manipulations, bromides or phenobarbital reduce the sensitivity.

7. Difficulties with operation due to adhesions following injections. I have operated on two patients whom I myself have injected. Further, I have operated upon two others who had been treated elsewhere. Recently I removed an acute appendix in a patient who had had injections previously by a very competent man. I found the cecum markedly adherent, which made the operation for an acute, beginning gangrenous appendix located postceccally most difficult. Of course, at times, we find marked adhesions of the cecum without the patient ever having had injections, but in this case the adhesions were directly in line where the injections had been placed. Unquestionably, patients whom I have injected will have some adhesions which will come to light at operation or postmortem.

The cases reported on were injections begun in 1933 and 1934, and during those years, taking

in all types of herniae, I injected a few more than I operated upon, the ratio having been surgical 47.5 per cent, and injection 52.5 per cent. Of the cases of hernia I have seen in 1935, 1936, and 1937 and have not reported because they are too recent to evaluate, I have operated upon more than I have injected, the ratio being surgical 57 per cent and injection 43 per cent—a distinct shift toward surgery. Just where the pendulum between surgery and injections will come to rest will probably depend upon the individual surgeon. Some surgeons will operate only, others will tend toward injection. The majority of surgeons will probably do both injection and operation, depending upon the indications, upon the surgeon's inclination and experience, and somewhat upon the patient's economic circumstances and acceptance of, or objection to, surgery. A factor to be considered is that in the future patients with herniae will come earlier for treatment due to compensation insurance, better health education, and the interest aroused by the chemical injection method.

Conclusion

Herniae to be injected must be reducible and satisfactorily held in position with a truss. The large percentage of injections will be made in inguinal hernia, a few in femoral and umbilical. Only the smallest postoperative abdominal herniae above the umbilicus lend themselves to the injection treatment. Below the navel the small bowel is more commonly directly adjacent to the peritoneum. If surgical recurrences are found early enough, the injection method may prevent reoperation, particularly in inguinal hernia.

Of the solutions used in my experience, sodium psylliate has been less accompanied by pain and swelling. Proliferal and sodium morrhuate produce greater reaction but, in spite of that, may be indicated. Thuja mixture and Mayer formula are useful at times. Other solutions with which I have had no experience may have equal or greater merit. Study of injection material will be continued and widened.

Because many injections are being given to older men who are succumbing to the degenerative diseases, postmortems should be increasingly available. Study should be made of the question

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of semen and potency in patients operated and in those injected. The grouping of complications from either operation or injection should be increasingly recorded.

More accurate observation of the condition of the testicle and cord, previous both to operation and injection, should be recorded. It is natural that great interest should be aroused with any change in these organs, but too often an unfair and unjustifiable attitude of complaint is taken and hence every precaution is needed to record previous abnormalities.

Precautions always to be remembered are: Complete replacement of protruding tissues, which should positively be held in place with truss; withdrawal of the piston of the syringe to avoid injecting into a blood vessel; slow injection to try out the location and patient's reaction; careful follow-up and extra injections to secure sufficient strength in the holding tissues.

In selecting cases and advising patients concerning results with either operation or injection, ease of cure is in proportion to the decade of

life, size and character of the hernia, general condition of patient's health, patient's coöperation, and the doctor's interest, knowledge, and experience in the procedure. A simple, indirect inguinal hernia is relatively easy of closure by the chemical injection method. All other types of hernia deserve careful study before treatment, other than operation, is advised. In the aged or decrepit, injections may bring relief without cure.

A qualified enthusiasm for the injection method will, of course, secure better results than half-hearted interest and less experience. To secure results with the injection method takes more persistence, close attention to detail and study of the individual case than some are willing to give when operation offers satisfactory results.

Because of recurrences and realizing that, after all, only scar tissue is secured from injections and this tends to give way, and because of the other difficulties discussed, I tend increasingly to advise operation more often than when first I began the trial of the injection method of treatment.

THE PRESENT STATUS OF INFESTATION OF FISHES OF LONG LAKE, ELY, MINNESOTA, WITH THE LARVAE OF DIPHYLLOBOTRUM LATUM*

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IN previous papers^{1,2} it has been shown that susceptible fishes of Long Lake, also known as Shagawa Lake, at Ely, Minnesota, were more heavily infested with the plerocercoid larva of *Diphyllobothrium latum* than were fishes of any other body of water studied in this state. During the past summer (July, 1937) another series of fishes was examined to determine whether any changes in the incidence of infestation had occurred. The number and species of fishes examined were as follows: fifteen *Stizostedion vitreum* (walleyed pike); four *Esox lucius* (pickerel); two *Perca flavescens* (yellow perch). Both the musculature and viscera were inspected. The walleyed pike measured from 21.2 to 28.8 cm. in length and harbored from one to twenty-six larvæ. The average infestation was more than six larvæ for each fish.

The pickerel varied from 38.7 to 45 cm. in length and each harbored from four to twenty-six larvæ. The average number of larvæ for each fish was more than fifteen. The two small yellow perch examined were not infested (Table I). The number of larvæ found in the different species of fishes examined prior to 1930 was approximately the same as found in the present survey (Table II). These data indicate very clearly that there has not been a change in the infestation of fishes of Long Lake, at Ely, Minnesota, since the previous investigations.

I wish to thank Dr. T. Surber for his co-operation and Wardens Hanson and Carlson for valuable assistance in obtaining fish for examination and Dr. J. E. Thompson for the use of his laboratories. I wish also to express appreciation to Donald C. Balfour, Jr., who assisted in all phases of the investigation.

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TABLE I. THE INFESTATION OF FISHES OF LONG LAKE WITH LARVÆ OF DIPHYLLOBOTRÍUM LATUM IN 1937

Species	Common Name	Length, cm.	Diphyllobothrium latum larvae
1. <i>Stizostedion vitreum</i>	Walleyed pike	25.6	7
2. <i>Stizostedion vitreum</i>	Walleyed pike	25.6	10
3. <i>Stizostedion vitreum</i>	Walleyed pike	28.1	2
4. <i>Stizostedion vitreum</i>	Walleyed pike	26.9	10
5. <i>Stizostedion vitreum</i>	Walleyed pike	27.5	4
6. <i>Stizostedion vitreum</i>	Walleyed pike	25.0	2
7. <i>Stizostedion vitreum</i>	Walleyed pike	28.1	4
8. <i>Stizostedion vitreum</i>	Walleyed pike	38.0	26
9. <i>Stizostedion vitreum</i>	Walleyed pike	21.25	4
10. <i>Stizostedion vitreum</i>	Walleyed pike	37.5	6
11. <i>Stizostedion vitreum</i>	Walleyed pike	28.8	4
12. <i>Stizostedion vitreum</i>	Walleyed pike	28.8	1
13. <i>Stizostedion vitreum</i>	Walleyed pike	28.1	5
14. <i>Stizostedion vitreum</i>	Walleyed pike	26.2	4
15. <i>Stizostedion vitreum</i>	Walleyed pike	23.1	3
1. <i>Esox lucius</i>	Pickerel	45.0	4
2. <i>Esox lucius</i>	Pickerel	43.1	17
3. <i>Esox lucius</i>	Pickerel	46.2	26
4. <i>Esox lucius</i>	Pickerel	38.7	16
1. <i>Perca flavescens</i>	Yellow perch	12.5	0
2. <i>Perca flavescens</i>	Yellow perch	15.0	0

TABLE II. THE INFESTATION OF FISHES WITH LARVÆ OF DIPHYLLOBOTRÍUM LATUM PRIOR TO 1930 COMPARED WITH INFESTATION IN 1937

Species	Prior to 1930		1937	
	Examined	Positive	Examined	Positive
<i>Esox lucius</i>	12	12	4	4
<i>Stizostedion vitreum</i>	6	6	15	15
<i>Perca flavescens</i>	10	6	2	0
Total	28	24	21	19

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OVARIAN TUMORS AMONG YOUNG GIRLS

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WHILE comparatively rare, ovarian tumors occur with sufficient frequency among young girls to make it essential to keep the possibility in mind when dealing with abdominal symptoms. The diagnosis can be made pre-operatively in most instances.

Mayo and Fauster, in 1932,¹ reviewed the cases in which ovarian tumors were found among young girls at The Mayo Clinic. This report deals with the subsequent cases in which this condition was encountered. Hubert recorded 175 cases in which solid and cystic tumors of the ovary were found among children up to seventeen years of age. Of these, sixty were malignant and 115 benign. Of the malignant tumors, thirty-two were sarcomas and twenty-eight were carcinomas. Of the benign tumors, fifty-three were cysts, thirty-nine were dermoids, nineteen were cystadenomas and four were hematomas.

This clearly brings to mind the serious import of the diagnosis of an ovarian tumor in childhood as the occurrence of malignant tumors at this age is relatively much more frequent than it is in adult life.

Since the report by Mayo and Fauster, nine young girls who had ovarian tumors have undergone operations at the clinic. A study of the clinical history in these cases and a review of the cases reported in the literature revealed certain important facts. While these facts cannot be made to fit every case, yet they are sufficiently common to all the cases to permit one to be suspicious of ovarian tumors when they are encountered.

The first fact that is significant is the history of the pain and its nature. It is usually a mild, dull type of pain which is situated in the right or left lower portion of the abdomen; it persists twenty-four to forty-eight hours and then recurs at short intervals of a week or two. It frequently is related that an enema relieves the

pain and this leads to another characteristic, namely, that the pain commonly is not associated with any digestive disturbance. There is no nausea, vomiting or diarrhea. The child may be slightly constipated. When the pain is sharp it is often brought on by active play or by riding in an automobile; it completely disappears in a few minutes to a half hour. The child may then wish to go out and play again.

Sudden attacks of agonizing abdominal pain which are associated with vomiting and much abdominal tenderness do, however, occur infrequently. Wakeley ascribed this to a sudden rising of the cyst out of the pelvis, which causes shock. Twisting of the pedicle, as is well known, may cause the same acute symptoms. In only one of the nine cases in this report was any nausea or vomiting associated with the pain. Girls may have symptomless abdominal tumors.

The physical findings are dependent on the size of the tumor. If the tumor is sufficiently large to enter the abdominal cavity, it is palpable, usually, as a freely movable mass and there is slight associated tenderness. Should the tumor remain in the pelvis and its presence not be suspected, the lesion may be erroneously considered appendicitis. However, rectal examination affords very definite information because if it is made the tumor can be palpated. Because of the small size of the pelvis of a young girl, the pelvis can be very completely explored by bimanual palpation with one finger in the rectum.

As pointed out in the paper by Mayo and Fauster, the acute abdominal symptoms caused by a twisted ovarian cyst may very easily be confused with those caused by an appendiceal abscess. The physical findings of abdominal tenderness and a pelvic mass are likewise confusing. The preoperative diagnosis in one of our nine cases was appendiceal abscess.

Roentgenograms of the abdomen, taken to exclude the possibility of stones in the urinary tract, showed definite soft tissue shadows in the pelvis in three of our cases. In one instance the pres-

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ence of multiple smaller shadows within the soft tissue mass enabled the roentgenologist to surmise correctly that the tumor was a dermoid.

The total leukocyte count and the percentage of neutrophils are of no value in the diagnosis as they may either be elevated or normal.

Report of Cases

Case 1.—A girl, aged twelve years, had had a few mild pains in the right lower abdominal quadrant for six weeks. She had noted that riding in a car would bring them on. The pains had been sharp at times and of short duration; they had lasted about a half hour. There had not been any associated digestive or urinary symptoms. For two days before the patient came to the clinic the pain had been constant and more severe. Examination of the abdomen did not reveal any abnormality but rectal examination disclosed a tender mass in the right side of the pelvis. A diagnosis of appendiceal abscess was made and the abdomen was explored. A hemorrhagic dermoid, which had a twisted pedicle, was found and removed. Convalescence was uneventful.

Case 2.—A girl, aged thirteen years, had darting pain in the right lower abdominal quadrant for four months; the pain had lasted only a few minutes. There had not been any radiation of the pain. The patient had not had any symptoms which were referable to the gastro-intestinal or urinary systems. Examination of the abdomen revealed a large mass which on rectal examination was found to be pelvic in origin. A diagnosis of pelvic tumor, probably a cyst, was made and exploratory laparotomy was performed. The mass was found to consist of a simple ovarian cyst, 5 cm. in diameter, and a hematocolpos caused by a diaphragm-like occlusion just behind the hymen.

Case 3.—A girl, aged thirteen years, came to the clinic because of sharp attacks of pain in the left lower abdominal quadrant; the attacks had lasted about six hours. In the three weeks before the patient came to the clinic, she had had five such attacks; the last one had been accompanied by vomiting. The pain had extended down the anteromedial aspect of the left leg. A tender mass was found in the left lower quadrant of the abdomen, both by abdominal and rectal examination. A roentgenogram of the kidneys, ureters and bladder did not reveal any abnormality and the urine was normal. A diagnosis of twisted ovarian cyst was made. Operation revealed that the left fallopian tube and ovary were twisted on the mesosalpinx with a double twist. A gangrenous fallopian tube and a simple cyst of the ovary, 9 cm. in diameter, were removed.

Case 4.—A girl, aged twelve years, had had a strangulated necrotic right fallopian tube and ovary removed five years before she came to the clinic. In

the year before the patient came to the clinic she had had six attacks of pain in the left lower abdominal quadrant; the pain had been relieved by enemas and the passage of gas. On examination, a mass the size



Fig. 1. Gross appearance and cut surface of dermoid cyst removed in Case 8.

of a grapefruit was palpable in the left lower abdominal quadrant; rectal examination confirmed the presence of the mass. A roentgenogram showed a mass of soft tissue in the same region. A roentgenogram of the kidneys, ureters and bladder was normal. (A hemorrhagic gangrenous ovary was removed from the left side; it consisted almost entirely of a blood clot.

Case 5.—A girl, aged eleven years, had had frequent attacks of headache, vomiting and abdominal pain for a month before her admission to the clinic. A large abdominal tumor the size of a grapefruit was palpated. A roentgenogram of the abdomen did not reveal any abnormality except a mass of soft tissue. The pre-operative diagnosis was ovarian tumor. Exploratory laparotomy revealed a simple hemorrhagic cyst of the left ovary, 14 cm. in diameter; the cyst was removed. The right ovary was 10 cm. in diameter and contained one large cyst and numerous bean-sized cysts. It was removed, but a small strip of ovarian tissue was left. The uterus was congenitally absent; only a stump of the cervix was present. When the patient returned to the clinic four years later she was in good general health and was menstruating from the cervical stump.

Case 6.—A twelve-year-old girl presented herself complaining of left-sided abdominal pain which had begun eight months before she came to the clinic and had continued intermittently. She had had no nausea or vomiting or any intestinal symptoms except slight constipation. Examination revealed a tender pelvic-abdominal mass. A diagnosis of pelvic tumor was made and exploratory laparotomy revealed a hemorrhagic parovarian cyst on the left side and a markedly engorged fallopian tube which had resulted from a twisted pedicle. Both of these were removed.

Case 7.—A girl, aged eight years, had been operated on four months before she came to the clinic. She had had an attack of pain in the right lower quadrant of the abdomen and the right thigh. There had been some abdominal

PERNICIOUS ANEMIA AND PULMONARY TUBERCULOSIS—SHARP

tenderness and rigidity and a fever of 101° F. Part of a tumor and the appendix had been removed. The same attacks had continued intermittently ever since the operation. The tumor was found to form a mass which completely filled the lower part of the abdomen and was adherent to the small bowel, cecum and sigmoid colon. It originated in the right ovary. The tumor was removed, together with the left ovary, fallopian tube and the uterus, because of their dense attachment. It proved to be a teratoma which contained hair, cartilage, sebaceous material and a multilocular papillary cystadenocarcinoma, grade 1.

Case 8.—A girl, aged seven years, came to the clinic complaining of dull pain in the lower left side which had lasted one to two days. It had been relieved by an enema and had not been accompanied by nausea or vomiting. These attacks had recurred every one or two months. Three months before the patient came to the clinic, abdominal tenderness, fever and some vomiting had occurred. A diagnosis of streptococcus peritonitis had been made. She was hospitalized for three weeks. Examination showed tenderness in the left lower abdominal quadrant and a large mass which was connected with the uterus. A roentgenogram of the abdomen revealed soft tissue shadows which suggested a dermoid. Accordingly, she was operated on and a dermoid cyst the size of a lemon, which arose from the left ovary, was removed (Fig. 1). It was lying in the cul-de-sac of Douglas and was attached to the uterus and sigmoid colon.

Case 9.—A girl, aged fourteen years, was admitted to the clinic because of sharp pains in the right lower quadrant of the abdomen. The pains had lasted only a few minutes and then had disappeared. These attacks even had awakened her from sleep. She had had no nausea or vomiting. The attacks first had occurred two weeks before her admission to the clinic. Examination revealed tenderness in the right lower abdominal quadrant and some rectal tenderness on the right side.

On exploration a tumor the size of a golf ball, which was filled with clotted blood, was found in the right ovary. The tumor and adjacent ovarian tissue were removed; the remainder of the ovary, which appeared normal, was left. (The tumor proved to be a corpus luteum cyst.)

Comment

The technical problem in the removal of these tumors is usually not difficult. Davidson's suggestion of the use of extreme care in mobilizing a twisted cyst and the placing of a clamp on its pedicle well below the twist before any manipulation is valuable in the prevention of pulmonary embolism following operation.

Summary

We have added eight more cases, which makes a total of sixteen cases in which ovarian tumors have been found among young girls at the clinic. The majority (seven) of these tumors were simple ovarian cysts; four were dermoid cysts; three were carcinomatous cysts; one was a paraovarian cyst, and one was a sarcoma. This seems to emphasize the importance of keeping in mind the possibility of ovarian tumors in young girls, as a fourth of the tumors in this series were malignant.

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COEXISTING PERNICIOUS ANEMIA AND CHRONIC PULMONARY TUBERCULOSIS*

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NUMEROUS theories have been advanced to explain the rarity with which pernicious anemia and chronic pulmonary tuberculosis have been associated. Mathias^{1,2} believed that a lack of hydrochloric acid in the stomach produced an unfavorable medium in the tissues for the

growth of the tubercle bacilli. This was disproven by Neuberger,³ who reported a patient with deficient acid secretion as well as coexistent hemolytic jaundice and chronic pulmonary tuberculosis. Neuberger, Meissner,⁴ and Leven⁵ believed that the toxic substances caused by the tubercle bacilli stimulated the bone marrow in a way comparable with those produced by liver

*From Glen Lake Sanatorium, Oak Terrace, Minnesota, and Minneapolis, Minnesota.

PERNICIOUS ANEMIA AND PULMONARY TUBERCULOSIS—SHARP

and gastric mucosa. Quarnström,⁸ Scheidel,¹⁰ Shandel¹¹ and Wilkinson¹² explain the rare association of these two diseases in the following way: "Tuberculosis occurs chiefly in young people while pernicious anemia has its incidence in older people, and the association of these two diseases would therefore be rare, and is of no special significance in so far as actual antagonism is concerned."

The material for this study was obtained from the records of Glen Lake Sanatorium and Nopeming Sanatorium, the State Board of Vital Statistics for the year of 1934 and reviews of current medical literature. Since pernicious anemia is not a reportable disease, I have borrowed heavily from the works of Scheidel and of Shandel, who reviewed 269 and 1,127 cases of pernicious anemia respectively. The age incidence tabulated here represents the average of these two similar series (chart).

The age incidence of chronic pulmonary tuberculosis at Glen Lake Sanatorium for the year 1934 begins its rise at the 10-19 year level (5.5 per cent) and climbs rapidly to 32.9 per cent at 20-29 years, from which point it recedes gradually to 9.5 per cent at sixty plus years.

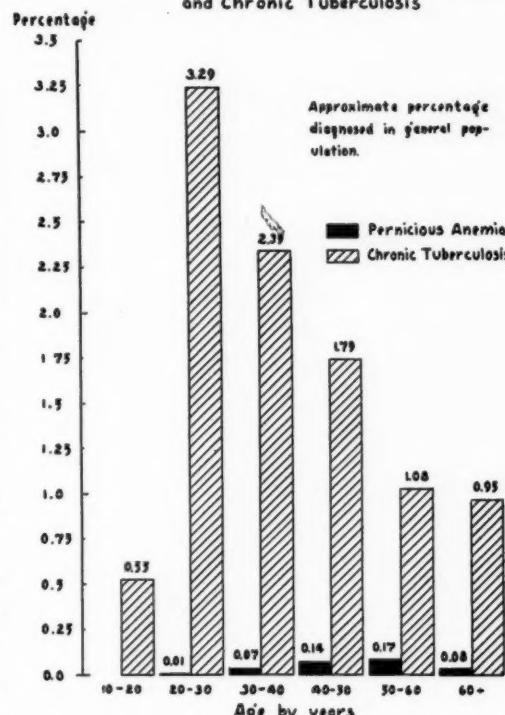
The age incidence of pernicious anemia begins its slow climb at 0-29 years (2.7 per cent) and rises to its maximum point of 33.5 per cent at 50-59 years, from which point it declines to a low point of 6.8 per cent at 70 plus years.⁹ The morbidity and mortality rates of pulmonary tuberculosis in Minnesota for the year 1934 are 118 and 30.5 per 100,000 population; a ratio of about 4:1. The incidence and death rate are strikingly similar in pernicious anemia; e.g., 4.9 and 4.4 respectively. Approximately three out of four cases of pulmonary tuberculosis recover. In the event that healing occurs under the age of fifty years, one can well appreciate this factor in the rare co-existence of these two diseases.

Case Report

W. S., a white man, sixty-seven years of age, was admitted to Glen Lake Sanatorium on August 10, 1934, with a history of cough and expectoration of five years' duration, increasing in severity until upon admission he raised two drams of muco-purulent sputum in twenty-four hours. The sputum contained tubercle bacilli which could be seen on stained preparations and which were pathogenic for guinea pigs. For three years, dyspnea had been present to such an extent that it was audibly evident at absolute rest; weakness and weight loss had been present for the same length of

time. In November, 1933, he was hospitalized for this complaint, and at that time he had a lemon yellow skin and sclera, pale mucous membrane and atrophic mucosa on the tongue. Numbness and tingling of the

The Relative Frequency of Pernicious Anemia and Chronic Tuberculosis



hands was noted. Blood studies, and gastric analysis confirmed the diagnosis of pernicious anemia.

	Nov. 1933	Jan. 1934	Aug. 1934	Admitted Glen Lake
Red Blood Count	1,950,000			3,350,000
White Blood Count	5,300	48%	90%	5,500 78%
Hemoglobin Morphology		anisocytosis macrocytosis polychromasia neutrophiles shifted to rt.		anisocytosis macrocytosis polychromasia poikilocytosis shifted to rt. reticulocyte .8%
Gastric Expression	Free HCl 0 degree		(after Histamine) Free HCl 0 degree	
	Combined 10-15 degrees	Combined 0 degree	Total 10-15 degrees	Total 2 degree

During 1933 and 1934 the patient responded well to liver, iron citrate, and dilute hydrochloric acid, and was discharged in January, 1934, with a hemoglobin of 90 per cent. He reported to the Out-Patient Department of the hospital for liver therapy intramuscularly.

On admission to Glen Lake Sanatorium this patient had far advanced pulmonary tuberculosis of chronic fibroid type as well as cavitation in the left upper lobe. The sclerae were yellow, and the face red; a small easily reducible inguinal hernia was present; the liver

FRACTURES OF NECK OF FEMUR—CAMPBELL

and spleen were not palpable. Vibratory sense was completely absent from ankles to iliac crests and markedly reduced at the wrists; other neurological examinations showed nothing of note. Intensive intramuscular liver therapy was instituted, and the reticulocytes increased temporarily from 0.8 to 2.9 per cent; the hemoglobin from 78 per cent to a level ranging from 85 to 95 per cent (Sahli). The patient thought the numbness and tingling of his fingers had diminished somewhat since admission.

The pulmonary tuberculosis has been practically without change over a fourteen month period of observation. His ultimate prognosis is rather poor and his tuberculosis does not seem to have been aggravated by the associated pernicious anemia.

Discussion

In Shandell's series of 117 cases of pernicious anemia, 69, or 59.6 per cent, are above fifty years of age. Two cases had associated pulmonary tuberculosis to which no special significance was attributed by the author.

From a study of 370 cases of pernicious anemia, Wilkinson feels that many conditions may co-exist with pernicious anemia without apparent causal relationship. Of this series eighty-six (23.3 per cent) had signs or symptoms of other conditions distinct from Addisonian anemia and one (0.27 per cent) showed a co-existence of acute pulmonary tuberculosis. There were no cases of chronic pulmonary tuberculosis.

In an extensive review of the literature, Wilkinson was able to collect only nine cases of chronic pulmonary tuberculosis associated with pernicious anemia before 1933. Of these, four cases were reported between 1903 and 1910 and some doubt may exist as to the diagnosis of pernicious anemia in these patients. Miliary tuberculosis was not mentioned.

In this study of 7,983 admissions to sanatoria

for tuberculosis, only one patient was found to have these two conditions. In a series of 16,600 autopsies, Barron¹ found ninety-six cases of pernicious anemia, two accompanied by miliary tuberculosis, and three arrested or healed tuberculosis. He reports two cases of pernicious anemia associated with active pulmonary tuberculosis.

This is the first recognized case of chronic tuberculosis in association with pernicious anemia in 6,600 cases admitted to Glen Lake Sanatorium and 1,383 admissions to Nopeming Sanatorium. There is a marked difference in the incidence of pernicious anemia and chronic pulmonary tuberculosis. This study reveals that the coexistence of these two diseases is extremely rare, and apparently the presence of one has no inhibitory effect on the other.

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CENTRAL FRACTURES OF THE NECK OF THE FEMUR TREATED BY INTERNAL FIXATION*

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Memphis, Tennessee

IN AN analysis of 495 fresh fractures of the neck and trochanter of the femur, the distribution as to location was as follows:

Trochanteric	229
Complete central	214
Impacted central	52

*Abstract of paper read before the Southern Minnesota Medical Association, Winona, Minnesota, August 11, 1937.

Of those occurring in elderly individuals over seventy, the average age of 108 trochanteric fractures was 78.1; of seventy-eight complete central fractures, 74.6; and of nineteen impacted central fractures, 79.5 years.

Thus, impacted fractures of the neck of the femur and intertrochanteric fractures constitute more than half (56.7 per cent) of these fractures, and in this half, union may be expected in practically 100 per cent, if only approximate anatomic apposition is maintained.

FRACTURES OF NECK OF FEMUR—CAMPBELL

Consequently, in any discussion of fractures of the neck of the femur it is most important that differentiation as to location and characteristics be made. Central fractures of the neck of the femur constituted only 43.3 per cent of fractures in and about the neck and trochanter of the femur; only in this group is there any doubt as to securing osseous union. Prior to 1904, it was considered that central or intracapsular fractures did not unite by osseous union.

No one has been a stronger advocate of the Whitman procedure than I, but after seeing the results of Smith-Petersen and others, I have come to the conclusion that internal fixation not only gives a higher percentage of excellent functional results and firm osseous union, but also materially decreases the time in which union is secured, so that weight bearing and walking without support is obtained in from four to six months as compared to six to twelve months by the Whitman method. Also function in the knee and hip is materially conserved, and permanently restricted motion is exceedingly rare. The mortality has been materially decreased by the less extensive means of immobilization and the shorter time of confinement to bed.

My colleagues and I have employed the three-flanged nail in forty-nine cases of complete, central or intracapsular fractures of the neck of the femur. In eleven, the procedure as described by Smith-Petersen was employed, which consisted in a complete exposure of the hip joint and trochanter; in thirty-eight, the nail was inserted through a lateral incision with "blind nailing." The Smith-Petersen technic has been entirely discarded, as so-called "blind nailing" is a less extensive surgical procedure.

The present technic of insertion may be described as follows: Reduction is uniformly accomplished by the well-known Whitman abduction method, so that usually no roentgenogram is made at this time. After reduction, abduction is reduced to about 120 degrees so as to facilitate insertion of the nail. An incision approximately four inches in length is now made over the lateral aspect of the greater trochanter and upper two inches of the shaft exposing the lower half of the greater trochanter and upper two inches of the shaft. A 3 mm. steel wire peg is then placed into an ordinary chuck drill, and the sharp end of the wire inserted into the center of the shaft about three-quarters of an inch below the trochanter. Great care must be taken that the wire drill makes an angle with the shaft of about 45 degrees and is angulated forward about 10 to 15 degrees to conform to the normal anterior deviation of the neck. The wire is now drilled about two inches in this direction, after which roent-

genograms are made in both planes which will confirm reduction and the exact direction of the wire drill. If reduction has not been accomplished, a second attempt can be made, but this has not been necessary in any case; also if the wire is not accurately placed, other attempts can be made until the desired direction is obtained. If reduction and direction of the wire are satisfactory, the wire is drilled into the head of the bone to within one-quarter to one-half inch of the joint, depending on the length of the proximal fragment. This is confirmed by the roentgenogram. The protruding portion of the wire is now measured by placing a wire drill of the same length parallel with the protruding portion, and a nail of the exact length selected. I employ a modification of the three-flanged steel Smith-Petersen nail with a tunnel through the center, which is slightly larger than the wire. The nail is then threaded on the wire. A driver with a tunnel in the center is now threaded over the wire and the nail driven through the neck and head by the aid of a heavy mallet. The wire is removed and the driver placed over the trochanter, and the instrument tapped a few times with a mallet so as to closely approximate the fragments. Roentgenograms should not consume more than fifteen minutes, and should be developed and returned to the operating room in five minutes. The entire procedure requires not more than thirty to forty minutes.

After operation, the limb is placed in a Hodgens' splint. At the end of three weeks, roentgenograms are made in order to confirm the position, which we have always found undisturbed. Motion in the knee is instituted at the end of four weeks, when the patient may be removed to his home. At the end of three months, walking is instituted without weight bearing, and at the end of four months, weight is borne on crutches. At the end of five to six months, crutches are discarded if union is firm, as demonstrated by the roentgenogram, which should show trabeculae transversing the line of fracture. Undoubtedly, it is possible that function may be resumed earlier, but the physiologic status in this location is such that firm union is always slow.

In this series, twenty-one cases have been followed for over one year with 88 per cent solid union; however, nine per cent of these have degenerative changes indicative of a devitalized head with an ultimate prognosis of very poor function. With improvement in technic and further experience, 80 to 85 per cent solid osseous union with a good functional result can be anticipated.

CASE REPORT

POISONING WITH CICUTA MACULATA OR WATER HEMLOCK

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Minneapolis, Minnesota

CICUTA is a highly toxic plant. Many deaths amongst men and animals have been traced to this plant. This plant is also known as Wild Parsnips, Water Hemlock, Cowbane, Beaver or Muskrat poisoning, Children's Death, et cetera. This is one of our most common swampweeds, growing abundantly along streams, ponds, ditches and wet meadows, throughout the Eastern and Central portions of the United States.

Since the middle of the sixteenth century, Cicuta has been recognized definitely in the United States. It has sometimes been confused with Conium which was a poisonous hemlock given to Grecian and Roman criminals. The poison was probably Conium or extracts and mixtures of several other poisonous plants. It was this plant which was probably similar to Cicuta. The symptoms of Socrates' death which were recorded in detail bore no resemblance to those of Cicuta poisoning.

Conium was studied in 1541 very accurately by Konrad Gesner. He gave the name Cicuta Aquatica to Water Hemlock.

Cicuta Maculata is a perennial and a member of the parsnip family. The Cicuta plant has a hollow green, jointed stem which grows from three to six feet high, and has narrow leaves divided several times. It has a small green-white flower with dense clusters. The root has a bunch of spindle shaped shoots which give forth a yellow, gummy secretion similar to that of the parsnip. This secretion is sweetish, and not disagreeable to the taste, so that adults and children have eaten quantities sufficient to prove fatal.

From other umbelliferous plants, the roots are differentiated by the presence of numerous transverse chambers which are seen in a section. Cicuta differs also from garden parsnips with which it is sometimes confused in that the parsnip has yellow flowers, one single root, a leaflet which has a broader stem and which is rough, and the plant is not necessarily grown in wet places.

In 1679 Wepfer recorded the symptoms of Cicuta poisoning, giving a detailed account of five children who were fatally poisoned. He dwelt particularly on the non-coagulation of the blood. Later in 1723 Weimann described the poisoning of two students. In 1756 Schwenke recorded the poisoning of four children in the village of Overschie. A New Englander, Stockbridge, in 1814, gave the first public account in this country of Cicuta poisoning. He described the poison-

ing of three patients, one dying in violent convulsions. M. R. Stratton published an account of the poisoning of eleven boys in Denver, two proving fatal. This is the greatest number of cases of Cicuta poisoning reported by any one observer up to the present time. In a review of the literature of this subject, Egdahl included a total of 47 cases, but it doesn't seem possible that this represents the entire number of poisonings due to Cicuta.

Toxicology

The poisonous resin of this plant was first isolated in 1876 by Bachm who named it cicutoxin. An aromatic, yellowish, oil like-substance exudes when the root stock is cut and the odor is similar to parsnip. The toxin has been described as a clear plant resin, which is sticky and soluble in either chloroform or alcohol. The leaves and stems are less toxic than the root stocks. This plant is most poisonous during the spring. During the growing season, the stored material is absorbed in the development of the plant and is of course then less virulent.

Necropsy examinations have reported the following findings:

1. Emphysema and edema of the lungs.
2. Non-coagulation of the blood after twenty-four hours.
3. Multiple hemorrhages.
4. Generalized congestion of the central nervous system.
5. Widely dilated pupils.
6. Glomerular nephritis.

Report of Cases

On June 14, 1924, I was called to attend two boys nine and thirteen years of age who had been taken suddenly ill. They had been dismissed from their classes at 3:30 P. M. apparently well, and immediately went to play. At 5:15 the boys were eating their evening meal. The parents observed that they appeared pale and sickly and that they refused their supper. One of the boys asked permission to leave the room, complaining of nausea, but before going very far, fell to the floor with violent convulsions. When I arrived, twenty minutes later, the older child was in a convolution and the other was vomiting and appeared seriously ill. The children were evidently suffering from some sort of poison. I soon found out they had eaten of a plant, the nature of which was unknown to me at the time. There was a plat of swamp land adjoining their home in which water hemlock grew
(Continued on Page 296)

HISTORY OF MEDICINE IN MINNESOTA

SURVEY OF PIONEER MEMBERS OF THE ST. LOUIS COUNTY MEDICAL SOCIETY

By RICHARD BARDON, M.D.

IN TWO previous chapters an attempt has been made to trace the development of the medical profession in Duluth and St. Louis County, and to record the contribution of the men who practiced during that period. These men are well known to the older members of the society; some are still living and in active practice. It is not possible, in this narrative, to include detailed biographies of all the pioneer practitioners. The selection has been made somewhat arbitrarily on the basis of available data. The choice casts no reflection on the records of those who are mentioned by a few lines or paragraphs only. They were all pioneers in the civic and medical development of the county, and many will go down as "unsung heroes," who played their part in serving the community.

It is not the scope of this chapter to mention in detail the records of the surviving members of this early group, although it is difficult to pass by some names without giving them a salute. Such recognition is fitting not only because of their seniority in membership but because of their unselfish labors in the field of medicine, and the honors they have brought to the profession.

The appended list includes the names of the practitioners from 1883 to 1900, as appearing in the city directories. Doubtless, this list is incomplete, and it is to be hoped that the material presented in this brief series of papers will serve as a framework for future definitive research.

Acknowledgment is made to many who contributed data or suggestions used in this compilation: Dr. J. M. Armstrong of St. Paul, Dr. E. L. Tuohy, Dr. D. L. Tilderquist, Dr. C. A. Scherer, Dr. S. H. Boyer, Sr., Dr. W. A. Coventry, Dr. C. F. McComb, and Dr. A. E. Walker of Duluth.

William H. Magie

Duluth had a population of about 10,000 when Dr. Magie arrived there in 1884. William Henry Magie was born at Madison, New Jersey, September 30, 1854. When he was three years of age his parents moved to Henderson County, Illinois, and from the time he was about seven until he was fifteen he lived with the family in Chicago. Dr. Magie acquired his early education in the public schools in Chicago and Abingdon College at Abingdon, Illinois. In 1874, the family moved to Kansas, then recently freed from Indian occupation. The family settled on a ranch, and the father became an extensive rancher and a man of prominence in Kansas affairs during the seventies and eighties, being elected to the state legislature. Dr. Magie lived on the Kansas farm and ranch for several years, and previous to his medical training spent a year in a drugstore at Pittsburg, Kansas, and in 1882 entered the College of Physicians and Surgeons at St. Louis. He was graduated in 1884, and after a brief practice at Pittsburg, Kansas, arrived in Duluth, September 10, 1884. During the first fifteen years of his life in Duluth, he devoted himself to the arduous work of the general practitioner, but subsequently confined his work to surgery. Dr. Magie was for twenty-eight years of

HISTORY OF MEDICINE IN MINNESOTA

ficial surgeon of St. Mary's Hospital. He was president of the Minnesota State Medical Association in 1908. He was also a Fellow of the American College of Surgeons, and a Fellow of the Western Surgical Association.

Dr. Magie died in 1932. The following tribute, written by Dr. E. L. Tuohy, is of unusual interest:

Tribute by Dr. Tuohy

The safe exhibition of ether anesthesia in anybody's hands; high pressure sterilization, with proper ligatures and instruments for hemostasis; hospital beds and twenty-four-hour nursing—these and many other developments skyrocketed surgery into unexampled prominence after 1880. However, none of these developments could have come without the direction and intuitive judgment of men who, though not to be classed either as pioneers or researchers, became the great operating surgeons of that epoch. They were not the McDowell's, the Rushes, the Beaumonts, or even McBurneys. They developed independently here and there, usually in association with a hospital backed either by a nationalistic group or a religious order. Thus did Dr. J. B. Deaver advance with the German hospital in Philadelphia, J. B. Murphy with Mercy Hospital in Chicago, W. W. Mayo and his celebrated sons with St. Mary's in Rochester.

In like manner, but obviously in a lesser orbit, did William H. Magie advance himself to prestige and position in connection with St. Mary's Hospital in Duluth. The very distinguished daughters in the St. Paul family of Kerst (Mother Scholastica and Sister Alexia) put their lives and their considerable fortune at the disposal of the Benedictine Order in Duluth. Their present hospital was opened in 1898. Few investments of soul and money have ever produced better dividends. To Dr. Magie goes the honor of having been the surgical standard bearer who did for Duluth and vicinity what others were doing in something of the same tempo throughout our Middle West.

He left his impress in countless ways. He was honored by the profession at home and respected abroad. He was one of the earliest industrial surgeons, and under him many young men secured a first-hand introduction to the realities of practice that made them very successful men. His manner was not ingratiating. He was given to rather grandiloquent criticism of his fellows, and particularly his later competitors. This led no one to fail to appreciate his great diagnostic powers and technical competence. At a time when few laboratory and no x-ray aids were available, fancy what men of his type and essential isolation were pitted against. Malpractice suits threatened even as now, and without office or hospital records of any consequence such men relied upon their judgment and memory to a degree few of us may appreciate.

Dr. Magie performed the first appendectomy in this region at the old St. Mary's Hospital (now St. Ann's Home for the Aged) in the year 1891. He performed the first gastro-enterostomy done here in 1895. For some years, I recall his use of the McGraw ligature type of anastomosis. He was a tireless visitor to medical sessions and surgical amphitheatres here and there. He was prone to retail the exploits of men like Ochsner, Deaver, Charles A. Wheaton of St. Paul, and Bernays of St. Louis (one of his early teachers). He handled fractures as cleverly as he supervised typhoids. With a twinkling eye he enjoyed nothing better than to regale the operating room troupe with gossipy comments of the day. For example, "I saw a new sign on our building today. A recent addition to our profession announces that he is to treat 'Diseases of Women and Children.' That's a fine idea. For years I've specialized in 'diseases of men, women and children.' "

HISTORY OF MEDICINE IN MINNESOTA

Behind all the banter, however, was a devoutly keen appreciation of the duties and privileges of those who find themselves the masters in our guild. It was his way to discipline and teach, and be it said to his very great credit—he played no favorites.

When the Steel Corporation built the new plant at Gary, on the St. Louis River, a fine unit hospital was built, and to it he transferred his work. In addition, he was medical consultant for several railroads and industrial plants. As his health failed, however, he returned to St. Mary's Hospital, where, after a lingering illness, he died. His early devotion to the interests of the Benedictine Sisters when his faculties were at their zenith brought him peace and surcease, as well as loving care, in his long, racking, final illness, with the tragic discomforts of myocardial weakness from coronary decay.

It may be said, without disparaging the work of any other men, that Dr. Magie, above all others, set the goal of honest and square dealing for this area as between doctor and patient; and he who was critical to a degree, at times, of others was equally severe with himself where he felt judgment had failed him. He was generous to a fault, and had the feeling of many who went through the panic of ninety-three that it was absurd to store up any savings. This thought may well obtrude at a time when history in the repetition may well be in enactment.

Apropos of Dr. Bardon's comments upon styles in horses and buggies for St. Louis County doctors, Dr. Magie had a spanking pair of bays, that vied for pre-eminence with the very exceptional equipages that were the pride of the Head of the Lakes at that time. The musk-ozen robes and beplumed cutter-like droshky are well recalled. He joined with many men of prominence in establishing hunting and fishing lodges on Isle Royale and elsewhere. The old guard in the State Medical Association knew him well. They elected him president at a Duluth meeting in 1908.

John J. Eklund

By E. L. Tuohy, M.D.

Dr. John J. Eklund practiced in Duluth from 1885 to the time of his death in 1922. Born in Hälsingland, Sweden, March 13, 1861, he came with his parents and family to Taylors Falls, Minnesota, at the age of five. He became ultimately the leading Scandinavian surgeon at the Head of the Lakes.

It is both impossible and improper to attempt to evaluate his useful career apart from the great migration to Minnesota of Swedes, Norwegians and Danes, which began shortly after our war between the States. The virile, individualistic and intelligent immigrants truly made great portions of Minnesota a new Viking stronghold. They came with their ministers, teachers, doctors, and other qualified artisans. Dr. Eklund typified the best among them to such a degree that these items may well become a part of a discussion of his life. These men and women held very closely to their home traditions and religion. It is conspicuous, for example, how many of our present-day Minnesota physicians are sons of Scandinavian ministers. While Dr. Eklund was not a minister's son, he early fell under the influence of the Church in his formative adolescence, and lived with an uncle, Reverend Engdahl, at Cambridge, Minnesota. He never forsook nor forgot this native religious guidance. It was one of his attributes, coupled with his sturdy body and honest mind, which led him directly into the confidence and esteem of thousands of his like-thinking compatriots.

He continued his education, still under Swedish guidance, at Gustavus Adol-

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thus College in St. Peter, Minnesota. For a number of years after 1893 he was a director of the College. It would appear that it was in St. Peter that he met Miss Nannie Asp, whom he later married in Duluth in 1888.

He received his medical training at the old Minnesota Hospital College, which later became the Medical Department of the University of Minnesota. Thus, it appears that he came under the tutelage of doctors who not only introduced him to American Medicine but American life as well. This was likely important, for Scandinavian doctors, trained before coming to America, often found great difficulty in adjusting their attitudes to the obvious novelties inherent in the development of the new land. Dr. Eklund suffered none of the restrictions upon manner, personality, approach or conduct imposed by a transfer so late in life. His was the great combination of deep traditional, religious and intellectual certainty gleaned from his clear-thinking Swedish forebears, upon which was engrafted an outlook and political urge, the product of living in a fertile and at that time unfettered land.

It is easy to see, therefore, in retrospect, how he developed along so many lines. A worthily religious man, he liberally supported his own church, not condemning other denominations; he acquired a high degree of surgical judgment and technic without in any way disparaging the work of others; he became almost a political seer and prophet, without ever asking for himself any conspicuous position; his business judgment led him to relative financial affluence, untrammeled by the envy of anyone, or leaving the evidence of wreckage, so often the obvious result of competitive ruthlessness.

It is true that he was elected Coroner for St. Louis County in 1898; he served on the first charter commission of Duluth, and was chairman of the Board of Health Committee of the Duluth Water and Light Board. Later, he was Presidential Elector at large for Minnesota in 1908. However, these and many other responsible and honorary positions he took in his stride. They did not keep him from successive visits for graduate courses and instruction in New York, Baltimore, Chicago, and elsewhere. In later years, he was associated in the management of two important Duluth banks, but maintained the keenest interest in all medical activities, and assisted greatly in the development of the Duluth hospitals.

Few men were ever more beloved among the profession for what they actually were. The writer best recalls certain personal attributes that memory retains of the period of about 1905: He had a very black Vandyke beard, always well trimmed. At the same time, he had a very heavy, black horse. This horse had acquired the faculty of lying down gracefully while harnessed and within the traces and tethered to a hitching post, the while he awaited the convenience of his master. After long days of calls and hospital duties the doctor's meals were likely rarely on time. Then, as was the custom, he had interminable evening office hours. Just across from his office was a theater which ran two evening shows. On occasion, the genial Dr. Charles F. McComb and his wife were planning to attend the second show. "Isn't it fine," remarked Mrs. McComb, "see, the crowd is just leaving the first show: the street is full of people." "You are wrong, my dear," Charles F. replied, "that is not the theatre crowd—Eklund is just closing up his office!" In those same offices, where he saw so much of life and granted its furtherance to many, came also his death. A demented man took his life and his own under some awful twist of the human consciousness which no one may ever understand.

Mrs. Eklund died in 1905. Their son, Dr. William J. Eklund, born in 1890, is now a member of the Minnesota House of Representatives, and president of the Duluth National Bank, which his father helped to organize.

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Charles Adams Stewart

In 1887, Dr. Charles Adams Stewart arrived in Duluth. Dr. Stewart was born in Sandusky, Ohio, on June 23, 1848. He was educated in the public schools of Sandusky, took a course at the Western Reserve Normal School, and graduated from the Medical Department of the University of Iowa, at Keokuk, in 1870, with a degree of M.D. He then returned to Ohio and practiced a while before entering the Medical Department of Western Reserve University, from which he was graduated in 1877. He then practiced in Marinette, Wisconsin, for about six years, later moved to Chicago, where he was in practice for about four years; and finally located in Duluth.

Dr. Stewart was one of the pioneer surgeons of the city, and the following description, written by Dr. E. L. Tuohy, who knew him well, is most interesting:

Dr. Stewart—The Man

By E. L. Tuohy, M.D.

As will be seen by this recital of his activities, medical and otherwise, he came to Duluth with "great expectations." Eighty-seven was not long before Ninety-three—the depression period that all those who passed away before 1929 looked back to as a chapter of despair that would never be repeated. Charles A. Stewart was one who stood in line for hours at the old Land Office in Duluth ready, when the minute and hour arrived, to make certain "filings" on the property near the upper St. Louis basin near Spirit Lake. With visions of an amplified Chicago in Minnesota, this land near the future docks had exceeding potential value, at least in the minds of those who at the same time swarmed into East Superior and laid out a city that fifty years later was said to have "usurped a lot of fairly good farm land." In any case, Dr. Stewart later said, when he sold his acreage to the Steel Company for part of its present site, "I received for it almost exactly what I paid for it, and had the honor of paying taxes on it yearly in the quarter-century interim."

Nevertheless, while his speculative ventures wound up in the conventional way, the failure to amass a fortune likely saved him for an extraordinarily useful and successful medical life. Among those who practiced in Duluth at the turn of the century none more decisively exemplified the doctor of poise, alertness, polish and resourcefulness. Endowed with indomitable will and self control, he held a rigid rein on his patients. So long as they obeyed him faultlessly he was their abject slave, calling on them at any and all hours, with total disregard for his own convenience and comfort. If they questioned his judgment or ventured to seek counsel elsewhere he maintained his equanimity if he could, and if he couldn't his sarcasm and irony were as superb as any of Voltaire's. Said a fluttery grand dame to him on occasion: "But Doctor, I am only going to get their opinion." "Yes," he replied, as he characteristically nodded his head and drew up the corners of his mouth sardonically, "and when you return you will have their opinion in a bottle."

He practiced in some four medical decades when it was all right to specialize in the eye or maybe at times the ear . . . but for the most part, every he-man doctor should be equal to the care of anything at any time. The growth of specialism in later years distressed him, as it did many others who saw the "family" stepping out and choosing their own type of doctor, even as they did their political party or religion. Some of us, today, could have learned much from him, and not a few did. He believed in therapeutics, and had a polished sequence of vehicles and adjuvants that were only exceeded by his extraordinary finesse in getting about among his patients. On occasion he told the writer, "You must enter a

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house; examine the patient, doing all that is essential for his comfort and outlook; speak to the family and give full reassurance; gain access to the hall and hat rack; leave as if in no hurry whatsoever, and be in your buggy and on your way in five minutes." Please remember, those were the days when "contagion" and "typhoid" bulked large in practice; when hospitals housed emergencies and transients; and when the doctor was supposed to be able to forecast the exact hour when crises, like comets, were to appear. A consultation was no casual affair, and to a young man it was a brilliant lesson in dignity. It was particularly awe inspiring when men like Drs. Stewart and Magie appeared in consultation and showed each other that courtesy of approach and expression that was most exalting; but when they foregathered singly and candidly gave their real opinions it was indeed a sorry reflection of how discordant personal competitive attitudes could so widely separate such truly gifted men.

They lived through the beginning of a period when our territory turned from lumbering to mining. Saddle-bag medicine had gone, but the "Horse and Buggy Age" was producing a coterie of independent folk in all lines who, at least, had their "feet on the ground" a goodly portion of the time. The highways and cars had not as yet despoiled the hamlets and assembled the urban pack of people who seem to serve mass service as well in Medicine as in Politics. So, when Dr. Stewart suffered a hemiplegia, sudden and permanent, he was in no mood to quit. To the writer he actually said, "Cut the damn leg off and I'll get down and sit in my office all day." He knew that if he had been able to get there a lot of old patients who worshipped him would come to see him.

A man wonderfully read, his mind was stored richly with wisdom, and he had the great gift to illustrate it with anecdote and reminiscence. It is not likely that he left any published papers, but he read many before local and state societies. Fate dealt kindly with Medicine, as it often does, when his trip to the Head of the Lakes, in search of fortune, ended his finding instead fame and friends.

A. J. Braden

The following résumé of Dr. A. J. Braden's activities was taken from the records of the Society:

Dr. Braden was born in New London, Ontario. He sprang from the sturdy Revolutionary stock of the state of Maine. While still a boy, his parents migrated across the line to the small town of Climax, Michigan, and here the Doctor received his grade school education, high school at Battle Creek College, and his college education at the University of Michigan. At the age of twenty, from 1880 to 1884, he served in the United States Army, most of the service on the Texas border. The urge for further training took him back to the University of Michigan, where he graduated from the Medical School in 1888. He must have loved this North Country for he went directly from his medical course to the shore of Lake Superior and practiced his profession at Munising from the time of his graduation until he changed location to come to Duluth in 1893. The work in upper Michigan must have been strenuous. He frequently related tales of the hardships of the practitioner in the earlier days of the upper Peninsula.

While in Duluth, he carried on as a general practitioner, acquiring a reputation as a keen diagnostician and a careful surgeon. Several postgraduate courses in surgery led him to closely limit himself in this field. In recognition of his work, he was admitted to fellowship in the American College of Surgeons among the earliest of the Duluth members. During his later years of practice he did much orthopedic and industrial surgery. He introduced various younger men to the practice in Duluth and several of our outstanding physicians thank Dr. Braden

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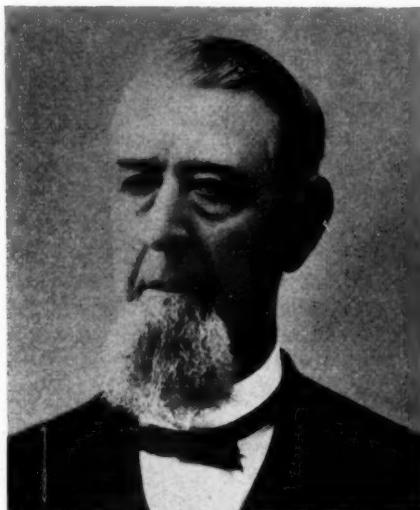
for the training received from him. The doctor was very assiduous in attending all local medical meetings, and was always prepared to discuss scientific papers. While never pushing himself he was always active in medical and civic affairs and held many offices. During the late war he served on the draft examining board. He was also the examining physician for the Shrine Hospital for Crippled Children for Duluth from its foundation.

Other Early Practitioners

Among the many early practitioners, A. F. Ritchie may be mentioned. He was a graduate of McGill in 1876, a charter member of the Society; a man of wide training, and of unusual skill in his profession.

DR. VESPASIAN SMITH

Dr. Smith figured frequently in the early civic and medical development of Duluth. An account of his life may be found in the preceding chapter on "Organization of the St. Louis County Medical Society."



Frank O. Sherwin, also a charter member, a graduate of Rush in 1878, was Health Officer for many years.

George W. Davis, a graduate of the University of Detroit in 1879—a pioneer physician and obstetrician—built up a large practice. He died May 4, 1923.

Jonas M. O. Tufty, a Norwegian by birth and medical training, was probably the first of his nationality to practice in St. Louis County.

Frank N. Phelan received his training in Wooster, Ohio, in 1884, and achieved a large following.

Horace Davis was graduated from Dartmouth in 1884; arrived in Duluth in 1888.

A. C. Taylor arrived in Duluth in 1889. Dr. Taylor was born in Michigan, May 4, 1848. He graduated from the University of Michigan in 1874, and practiced in Manchester, Michigan, for fourteen years, coming to Duluth in 1889. Dr. Taylor was actively identified with the organization and operation of the Training School for Nurses at St. Mary's Hospital. Although he engaged in general practice, he was particularly interested in Surgery, and at one time was local and consulting surgeon for the Duluth and Iron Range Railroad. He died suddenly on April 21, 1926.

J. A. McCuen was born January 27, 1864, at Guelph, Ontario. He was graduated from Toronto University in 1891, arrived in Duluth the same year, later serving as Mayor of the City in 1912-1913. He died in November, 1927.

HISTORY OF MEDICINE IN MINNESOTA

Pioneers Still in Active Practice

There are some twelve men whose arrival in Duluth places them in the pioneer period, although most of them are still in active practice. Among these are Dr. F. C. Bowman, born March 26, 1849; graduated from Hahnemann, Philadelphia, in 1881; located in Duluth the same year. Dr. D. C. Rood arrived in Duluth in 1888. A detailed sketch of his life is included in a paper by Dr. O. W. Parker, "Pioneer Physician of the Vermillion and Missabe Ranges of Minnesota," to be published subsequently. Dr. A. E. Walker, a graduate of Bellevue Hospital Medical College in 1890, has practiced continuously in Duluth since June, 1890. Dr. Mary McCoy, Michigan 1890, arrived in Duluth, July 8, 1890. Dr. Homer Collins practiced first in Rochester, Minnesota, for five years; then located here in September, 1890. He was graduated from Physicians and Surgeons, New York, in 1884. Dr. S. H. Boyer, Sr., arrived in Duluth on New Year's Day, 1891, and opened his office January 20, 1891, in the Norris-McDougall Block at No. 7 West Superior Street. In 1896, he was elected president of the County Medical Society, with the following slate: "President, Dr. S. H. Boyer; Vice President, Dr. Mary McCoy; Second Vice President, Dr. A. J. Braden; Treasurer, Dr. S. C. McCormick; and Secretary, Dr. C. R. Keyes." In 1930, Dr. Boyer was elected president of the State Society. He is in active practice, and has aided materially in the preparation of this paper.

Dr. C. R. Keyes graduated from Vermont in 1881; located in Duluth in 1891, after practicing in Olmsted County for nine years. Dr. Robert Graham graduated from Detroit Medical College in 1893, and has practiced in Duluth ever since. Dr. Peter Kraft took his medical work in Munich, 1892, coming to Duluth in 1893. Dr. J. M. Robinson, a graduate of Pennsylvania in 1891, came to Duluth in 1893; was a general practitioner, later specializing in Eye, Ear, Nose and Throat. Dr. William R. Bagley is a graduate of Michigan, and has practiced in Duluth since June 30, 1898; he is a past president of the County Society.

Charles Frederick McComb has been in continuous practice in Duluth since 1883. He was born at Stillwater, Minnesota, August 7, 1857, the son of James G. and Eliza Jane McComb. His father, a native of Pennsylvania, lived in Iowa, and subsequently became a territorial pioneer in Minnesota, and for many years was in business at Stillwater. Dr. McComb grew up in Stillwater, and spent two years at the State University, and after beginning his studies under Dr. P. H. Millard at Stillwater, entered Rush Medical College in Chicago in 1877, graduating in 1879. For three and one-half years he practiced in Rush City, Minnesota; then, following a postgraduate course in New York City, he located in Duluth.

Dr. McComb has twice been president of the St. Louis County Medical Society. He was the first president of the Interurban Academy of Medicine, and was president of the State Medical Society in 1887, being the first physician of Duluth to be so recognized. He was also a member of the State Board of Health under three governors. He served as Coroner of St. Louis County for two terms in the eighties, and in 1912 was appointed County Coroner, and has held that office continuously by election. During the World War, Dr. McComb was a medical officer on board the battleship Iowa, and was discharged from the Navy with the rank of Lieutenant Commander. Dr. McComb is the only living charter member of the St. Louis County Medical Society, and it is peculiarly fitting that an account of his life should bring to a close this "Survey of Pioneer Physicians of Duluth and St. Louis County."

(To be continued in May issue)

EDITORIAL

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Cancer Control Campaign

CANCER today is one of the outstanding problems of medicine and public health. Because of its rapid advance as a cause of death in the past few years, cancer has aroused considerable interest. It is fortunate that the American Society for the Control of Cancer has, as its managing director at this time, such an able leader as Dr. Clarence C. Little of Bar Harbor, Maine. Dr. Little, a former president of the University of Michigan, who was recently appointed to the National Advisory Board on Cancer by Mr. Morgenthau, did much to stimulate and assist the State Committee and those

interested in the local control of cancer by his recent visit to the Twin Cities.

While here, he addressed professional groups and a large lay audience. He emphasized that cancer is an individual problem and that the control of cancer lies with the cancer patient and his physician. *What* is done and *when* it is done largely determines the outcome of every case. He called attention to the fact that there are no community aspects to the cancer problem. Improvement of housing, protection of foods, purification of milk, water, and sewage, have no effect on cancer incidence.

The unwillingness of the layman to hear about cancer is being rapidly broken down. Daily it is becoming easier to enlist the interest and co-operation of laymen in the educational program. This fact makes it important to control and direct this lay interest into proper channels. This is the job of the medical profession, individually as well as a group.

While the fundamental research into the cancer problem is now focused more on the fields of chemistry, physics and biology, than on clinical fields, it remains for the clinician to apply these findings to the saving of lives and to the prevention of the disease. This means that he must keep abreast of the knowledge in these related fields.

The cancer death rate in Minnesota is much higher than for the country as a whole. Today, approximately every eighth death in the state is due to some form of malignant disease.

By coöoperating fully in the cancer educational campaign being sponsored by the Women's Field Army of the American Society for the Control of Cancer, especially the campaign for periodic examination to detect the beginning of cancer, the medical profession can create an influential body of opinion favorable to the ideals for which the profession stands, thus strengthening its stand against the encroachment of destructive forces. It is believed that from one-third to one-half of the 150,000 annual cancer deaths in the United States could be prevented if existing knowledge about the control of cancer would be utilized by the medical profession and the

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public. It is known that cancer in some sites, such as the skin, mouth, breast, and uterus, offers from 75 to 95 per cent chance of a five-year cure if treated before metastasis occurs.

That early cancer is curable is shown from the latest report of the American College of Surgeons, which has reported more than 29,000 five-year or longer cures of authenticated cases.

M. N.

Pulmonary Embolism

NOT much progress has been made in the control of pulmonary embolism since the true nature of embolisms in general was first disclosed by Virchow in the middle of the last century. Three types are readily apparent: those in which death occurs immediately, those in which death is delayed for a few hours at most and those which recover spontaneously. Obviously, for those in the first class, nothing curative can be done, for they are dead before a finger can be raised. Preventive measures have accomplished very little. Various drugs which delay the coagulation time of the blood have been used, without definite benefit. Increasing the patient's bodily activity while convalescing in bed from surgical operations, parturition, accidental injuries, et cetera, in the hope of stimulating the peripheral circulation and preventing the stagnation and thrombosis in the lower extremities, which so often is found to be the basis of these emboli, has come into general use and is undoubtedly useful, but as yet the incidence of pulmonary embolism has not shown any material reduction. Patients continue to die sudden, tragic deaths just as they are about to leave the hospital, or have reached a point in their convalescence when everyone concerned is looking forward to their complete recovery in a short time. It is the most catastrophic calamity in all professional experience and few practitioners escape meeting it, sooner or later. In the present state of our knowledge we are very helpless when it happens.

In the third class, where recovery occurs spontaneously, it is questionable whether treatment of any kind makes much difference. Sedatives and vasodilators are generally used, likewise oxygen inhalation, and when the patient recovers these agents receive the credit, but it is difficult to believe that such medication can

have any direct influence on a mechanical situation like this, where at least one fairly large embolus, or a "shower" of smaller ones, is plugging branches of the pulmonary artery.

It is in the second, or intermediate, class that the most definite advance has been made in curative treatment and where the greatest opportunity for further improvement is being anticipated. It was for this type, where the patient survives the onset of profoundly serious symptoms long enough for something to be done, that Trendelenburg devised his operation of pulmonary embolectomy, in 1907. Although he and his assistants tried it a number of times the attempts were always unsuccessful and it was not until the year of Trendelenburg's death, in 1924, that Kirschner had the first case of recovery. In all, there have been nine fully successful operations, all performed by Swedish or German surgeons. This would lend more encouragement, if there were not so many barriers to be surmounted. One of the greatest of these is the possibility of spontaneous recovery without operation and this has led Nystrom, who has had two successes, to postulate that only the obviously dying should be subjected to the operative treatment. Other obstacles are readily seen, especially in this country, where the surroundings and the medico-legal aspects are not nearly so well adapted to quick and effective action in these highly emergent situations as they are in the older countries.

The recent work of Leriche and his associates in the infiltration of the stellate ganglion with procaine solution invites serious attention. It is based on the hypothesis that the vasomotor reflexes play an important part in the mechanism of death in pulmonary embolism. At least the suggestion contains the merit of a simple technic and an absence of operative risk, but whether it will accomplish anything remains to be seen, for the experience of its progenitors is far too scanty, as yet, to warrant forming any definite conclusions.

G. C.

Nazi Persecution in Vienna

THE tragic events which followed the "anschluss" of Austria last month have involved not only political figures in Austria but prominent members of the medical profession in Vienna. That so many physicians, most of them

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Jews, should have preferred death to certain persecution under Nazi rule is an indication of what has been taking place in Germany.

Among those who have already committed suicide are Professors Wolfgang Dent, Gabor Nobl, Edmund Nobel, Arnold Baumgarten, Moritz Oppenheim and Jonas Borak of Vienna and Gustav Bayer of Innsbruch. Professor Sigmund Freud, of international fame, despite his eighty years and recent illness, is reported to have been robbed and prevented from leaving Austria. The fate of Professor Heinrich Neumann, the outstanding ear and throat specialist of Europe, hangs in the balance. It was he who got "in Dutch" two years ago by his refusal to operate on Hitler for a supposed cancer of the throat, on the ground that his nationality would be blamed in case of an unsuccessful outcome.

Hitler's usurpation of power which is an outstanding political phenomenon of all ages was made possible and in the eyes of many was essential because of the lawlessness and political chaos in Germany following the war. The same train of events came to pass in Italy and the situation in Russia is different only in that the dictator calls himself a communist instead of its foe. One man is the law maker, judge and executive and to maintain his position must also be the executioner.

While we do not for a moment believe that all Germans approve of the ruthlessness of Nazi methods, those who voluntarily support the Nazi régime give their approval to the present German political philosophy which has shown itself paganistic in its attitude to Christianity, not only unchristian but barbarous in its treatment of political opponents and Jews and has for the time being at least suppressed all ideas of individual rights and freedom for which democratic countries have fought for centuries.

"The Birth of a Baby"

THE American Committee on Maternal Welfare has prepared an educational film entitled "The Birth of a Baby" which is now being shown in regular moving picture theaters with an admission charge. Health leaders have used the printed page, radio, exhibits, and to some extent moving pictures as educational media. The chief drawback of most of these methods has been the limitation of audiences to individ-

duals of certain types. A public moving picture with sufficient dramatic interest should be an ideal method of reaching all types of people. "The Birth of a Baby" shows this to be true.

The functions of health education are to allay fear through understanding of the body, to emphasize the importance of preventive measures, and to stress the value of early diagnosis and treatment. Since the chief interest of most people is their health, the demand for such information is very great. To be effective it must originate from reliable medical sources. The moving picture entitled "The Birth of a Baby" was supervised in its making by five eminent obstetricians connected with leading universities and hospitals. The committee's effort has the endorsement of such organizations as the American Medical Association, United States Public Health Service, American College of Surgeons, and American Public Health Association.

For some time motion picture producers have known of the public interest in medical subjects. Hampered by tradition in producing other types of pictures, medical films with a few exceptions have left much to be desired. Many of the productions have been marred by sensational advertising, exaggeration, distortion, overemphasis of unimportant details and the inevitable low interest. In order to avoid this, the American Committee on Maternal Welfare assumed complete charge of production and distribution of "The Birth of a Baby." They were able to do this because of a gift from Meade Johnson and Company, which defrayed the expenses of making the picture, and an arrangement with a moving picture organization for distribution in an ethical way. The company is under contract to carry out rigid provision in regard to advertising and exhibition. The picture cannot be shown with any other picture which might be objectionable.

The first public showing in the United States was made in Minneapolis where it has just finished a run of three weeks. It was witnessed by 85,524 individuals. As the majority of those who saw it were between fifteen and forty-five years of age, it apparently reached one-third the population of Minneapolis in this age group. Before public exhibition it had been endorsed by the Minnesota State Medical Association, Hennepin County Medical Society, Ramsey County

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Medical Society, and the Minnesota State Association of Obstetricians and Gynecologists. Early in December, 1937, it was seen at Northrop Memorial Auditorium, University of Minnesota, by a crowd of more than 4,000 members of the medical, nursing and allied professions. This audience voted 98 per cent in favor of public exhibition.

The story is simply told. A young married woman tells her husband's mother that she thinks she is pregnant. She is advised to consult a physician at once. The audience witnesses her prenatal care through a series of examinations, sympathetic explanations, illustrated charts, and animated drawings. For contrast, a woman who desires an abortion, an inconsiderate husband of a pregnant woman who had borne many children, and a patient with toxemia who did not consult her physician, are seen. The climax of the educational picture is a carefully screened view of the final stage of birth. This is such a logical conclusion that it does not offend anyone.

The audiences in Minneapolis reacted in a wholesome fashion. Sensation seekers were disappointed, as the film is not a sex picture. There was no age limit at the box office which enabled families to come together. High school students were admitted without question as sex is developing during this age period. Many parents wisely concluded that it was much better for their children to get reliable information in a much better way than they were able to give it. If the children seemed too young, their parents were called to learn their wishes in the matter. During the entire three weeks' exhibition of the picture, no complaints were received. On the contrary, many people went out of their way to thank those responsible for its production.

In some states the film has met with official disapproval. When civic officials realize the value of wholesome information on prenatal care, the film will undoubtedly be shown. In 1936, 12,000 mothers died in childbirth in the United States, and 70,000 babies died between birth and one month of age. This is a desperate situation which should be corrected if possible. Ordinary educational channels have been tried without apparent success. The film brings the message home to those who need it most as it attracts mainly younger people of childbearing age. Much of the confusion in regard to the

picture has been due to misunderstanding and misinformation. The public response in Minneapolis apparently indicates that much immediate good will come from the picture. As time goes on its effect will be more noticeable since all educational efforts are cumulative.

The success of the public exhibition of "The Birth of a Baby" in Minneapolis was due to careful preparation and sympathetic co-operation of interested groups. The good taste displayed by the American Committee on Maternal Welfare in producing and marketing this picture is worthy of notice. The wholesome way in which it was received is an indication that our people are ready for the proper type of health instruction. It is a picture which provokes reverence and veneration for motherhood. The medical profession has insisted on its right to leadership in health education. The film "The Birth of a Baby" provides them with excellent material to meet the public's demand for ways and means to lower the maternal and infant mortality rates in our country.

W. A. O'B.

Minnesota Public Health Campaign

"**T**UBERCULOSIS Undiscovered Endangers You," is the slogan for the annual, spring, educational campaign to promote the early diagnosis of tuberculosis, sponsored in the state by the Minnesota Public Health Association.

The campaign will be carried on through the distribution of literature and the display of posters stressing the effect of tuberculosis on You—the Individual; You—the Family; and You—the Community.

The great need for educational work toward early diagnosis is brought out in the last annual report of Minnesota Tuberculosis Sanatoria issued by the Division of Tuberculosis, State Board of Control. The report states:

"Sanatorium superintendents are still confronted with a serious obstacle, in giving adequate treatment, due to the fact that the majority of cases admitted to the sanatoria are advanced cases of tuberculosis. In 1935, 10 per cent of the cases admitted were early cases; in 1936, 13 per cent were early cases. There is slight improvement, which is in the right direction, in the number of early cases admitted. However, nearly 90 per cent of the patients who come in are in an advanced stage of the disease, which is very difficult to arrest in most instances and requires prolonged periods of hospitalization and long periods of convalescence after discharge from the sanatorium."

MINNESOTA MEDICINE

MEDICAL ECONOMICS

Edited by the Committee on Medical Economics
of the
Minnesota State Medical Association

B. J. Branton, M. D.
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Future of Medicine

The importance of the American Medical Association survey of medical care in the United States cannot be over-stated.

It is up to every physician, through his county society, to furnish data requested and to coöperate in every respect with this survey.

The Minnesota State Medical Association is aware that the survey, to be of value, must be accurate and complete and will do everything in its power to make it so.

Instructions and plans will be available soon to all county officers. In the meantime committees should be appointed by every county society to carry on this work.

Action in Minnesota

"The technical committee on medical care, without mentioning 'socialized medicine,' tonight informed President Roosevelt that the effective distribution and use of health and medical services requires a national plan for economic application of our resources in maintaining and improving health."

This paragraph is quoted from a United Press dispatch printed February 26, in the *Minneapolis Journal*.

The committee mentioned is said to be an inter-departmental committee set up by the President to coördinate health and welfare activities.

Possibly one-half the population is unable to pay for medical services, the committee estimated in this newspaper report of its study submitted to the Administration; and "health and sickness services must be made more extensively available through measures that will lighten the . . . costs."

The importance of the American Medical Association study mentioned above in these columns is clear. It is clear also, that the study must be started promptly and pursued vigorously in every quarter of the United States.

Not even lack of funds can prevent damaging action by Congress or the legislatures on the basis of such alarmist reports, unless a sane, comprehensive and absolutely unassailable study of fact can also be put in the hands of the President and Congressional leaders *before* and *not after* laws have been passed.

Study outlines and blanks for the study have already been printed and are in the hands of state medical societies.

It remains now for each society to see the acute need and go to work. A meeting of the Committee on Medical Economics has been called by Chairman W. F. Braasch (also chairman of the Advisory Committee of the American Medical Association for this study) for April 3 in Saint Paul. Every effort will be made to make a prompt, accurate and honest study in Minnesota.

Replying to Survey Graphic

A series of articles on the English panel system of medicine have appeared in the last four issues of *Survey Graphic*. Like so many articles appearing in magazines of this type, they are inexact and biased and contain many superficial observations and half truths. However, they fulfill the mission for which they were intended in attracting a misguided and uninformed public. The purport of these articles is to emphasize that medical care in America is in crying need of reform and that it is much inferior to that given the lower economic group in England. The articles are written by a young physician just out of his medical school in collaboration with his wife, a social worker whose observations apparently form the bulk of the contributions. The authors were sent to England for this purpose, with funds given them by a social welfare organization.

Might Spoil Story

Typical of writers of this kind, no attempt was made to obtain the wealth of data concerning the actual working of the panel system which has been accumulated over the course of years by various American investigators. Such data could have been procured for the asking right in Chicago, at the headquarters of the American Medical Association—but they would, of course, have spoiled the articles.

To the average layman who might read these articles, the case would seem to be closed and proven. One might easily infer from some of the statements made that the only reason socialized medicine has not been instituted in this country is because of opposition from a group of retroactive, narrow-minded officials at the headquarters of the American Medical Association. It would also be inferred that the physicians who compose the A.M.A. are ignorant of the results and the workings of the panel system, have no ideas of their own, and stand dumbly by while the aforesaid officials tell them what to do.

They Do Not Know

The authors apparently do not know that many members of the American medical profession have either personally studied the panel system, discussed the matter fully with various types of English physicians, or have heard innumerable arguments on both sides of the question, so that they are able to form a fair idea of the situation for themselves.

The main argument set forth in favor of the panel system is the fact that most of the English laborers on the panel who were interviewed are satisfied with the medical treatment received. It should be remembered that prior to the establishment of the panel system the laborer had little or no medical care whatever, so that the treatment he receives now is undoubtedly, by comparison, a great improvement. Whether or not such standards of medical care would equal that received by the American laboring man is open to question.

System Admitted Incomplete

The authors admit that the panel system is incomplete in its scope and that the cost of laboratory diagnosis, examination and treatment by specialists, special medication, hospital fees, nursing care and surgery is all extra. These items,

of course, are what constitute the bulk of the cost of medical care and what the poor man has difficulty in paying for. A cursory, superficial diagnosis, together with the peddling of pills, which is apparently regarded as satisfactory medical treatment by the English laborer, is but a fraction of the total medical expense. The authors fail to mention the rapidly increasing cost of even this limited type of medical care in the English panel system, as well as the mounting expense of administration and the increase in insurance benefits.

Closing Their Eyes to Inefficiency

In the opening sentences of the first article the authors try to illustrate the difference between conditions which would obtain between governmental medicine in England and the United States. They cite the neglect of a public charge who falls on the street in an epileptic fit in Chicago, and compare it with the efficient care which the patient would have received from governmental health authorities in London. They seem to overlook the fact that the fundamental difference in governmental efficiency in England and America would be sufficient to make a similar system of health impractical and unsatisfactory in this country. With the idealism of youth and inexperience, they close their eyes to the possibility of bureaucratic or political control of American medicine, which undoubtedly would make the practice of medicine in this country an unbearable and inefficient system. The advantages of personal incentive and individual initiative, which have made American medicine what it is today, do not seem to be of paramount importance in their eyes. Another practical consideration which they seem to have overlooked is the fact that the cost of administering and conducting health insurance of this kind in our country would be so many times greater than even our vast national wealth would soon be depleted.

Impossible to Compare

The economic conditions, the standards of medical care, and the political situation in this country are so different from those in England that it is impossible to compare the medical situation in the two countries. American medicine will have to work out its own salvation. Much progress has already been made by individual units of organized medicine. The American

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Medical Association is at present making a nation-wide survey of the exact needs for medical care and most of us believe that American medicine can be trusted to work out a plan which will prove best for our country's needs.

With County Society Officials

The County Officers' Meeting affords the best opportunity of the year for county officers to compare notes, air grievances, get assistance.

More than eighty county officers, state officers and members took advantage of it at the 1938 session in Saint Paul, February 26. Proceedings and discussions are briefly reflected in the following highlights of the program.[†]

J. M. HAYES, Minneapolis, president of the Minnesota State Medical Association: On the basis of a recently conducted survey we may congratulate ourselves on Minnesota's system for handling medical relief. The plan is satisfactory in the majority of counties, a state of affairs which is in striking contrast to many other states where the right to choice of physician on the part of the relief patient is not recognized in the law. Fees for medical relief are unsatisfactory in some instances and require further negotiations between physicians and local county welfare boards for a better adjustment in others. The right of the patient to his choice of doctor is generally recognized, however, with only a few conspicuous exceptions where other difficulties exist also to cloud the issue.

For Revised Constitutions

J. C. HULTKRANS, Minneapolis: Every county society should review its constitution with a view to bringing it into conformity with present needs. A few societies are without written constitutions; this lack should be remedied at once. Disciplinary problems and questions arising out of requirements for admission to membership demand a written constitution for settlement. The state association *cannot* determine for the county society who shall and who shall not be admitted to membership. That is the most important single function of the county or district society.

GORDON C. MACRAE, Duluth: The St. Louis County Society revised its constitution recently; but has had to amend it since the revision. The

[†]The paper by T. V. McDavitt, American Medical Association, is printed in full elsewhere in this issue. The interesting address by Attorney General W. S. Ervin on the duties of his office is not included in this report.

President's Message

The recent action of the Board of Trustees of the American Medical Association in instituting the study, by state and county medical societies, of the prevailing need for medical and preventive medical services where such may be insufficient or unavailable, seems very timely.

This body occupies the key position for the supervision of such a study. Many other organizations with lofty ideals but equipped with improper armamentaria have attempted somewhat similar studies. No one can deny the usefulness of any of these studies. We may not like them nor agree with them. They may have done nothing but force out into the open controversial subjects. They may have done nothing but put us in the light as others see us. They may have uncovered only minor deficiencies in the practice of medicine. But we must admit they have aroused the medical profession to action. The profession must prove that it still maintains the high ideals handed down to it by our predecessors. It must prove that it still is true to the precedent long established. Probably no profession or group can look to a more favorable precedent than can the medical profession. Our knowledge and facts have been gained mostly from the work of those who have gone before us. A very superficial study readily reveals the marked scientific advancement in the recent past. Sometimes in our struggle to reach our goal in the more important side of medical practice, as well as in any other walk of life, we are likely to overlook other quite essential factors. No doubt, the practicing physician has to some extent, in the past, overlooked preventive medicine. The study of the relation of the practice of medicine to our general social program, especially from the economic side, has been left largely to those outside our profession.

These surveys and investigations of outside organizations at least serve to make us aware of these deficiencies. They serve to arouse us to the fact that we must devote more attention to these factors or allow those not so well trained to take charge of these angles of practical and preventive medicine. This study suggested by the National Board of Trustees should supplant all other medical surveys in the state. While much of the information will necessarily be only approximate, yet it is not conceivable that any other organization can obtain more definite information.

This study should result in giving us a fair estimate of the proportion of indigent to pay cases; how and where they are being cared for and the efficiency of our preventive medical program. Possibly, also, it will serve to eliminate any duplication of effort, either in the medical care or our preventive medical program.

J. M. HAYES, M.D.

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year previous to taking office. An amendment providing for a nominating committee (to replace nominations from the floor) is now in process of passage. Balloting is done by mail in advance of our annual meeting.

Unsung Physicians

M. C. PIPER, Rochester: For the sake of adequate records; for the sake of medical history; for the sake of the unsung doctor about whom, otherwise, little will be known when his family and friends are gone, the new application blanks should be filled in by members and applicants to membership alike. The new blanks call for a minimum of genealogical and biographical data; but they will serve as the basis for a general biographical file in the State Office. This data should be extended by some regular system such as a detailed questionnaire sent to all members each five years. The Woman's Auxiliary could help (see "The Council Meets," page 282) both by clipping information in publications and by actually interviewing members to secure the important data.

Health Records Included

These records might include not only scientific accomplishments, and progress but civic interests, hobbies, recreations. Also they should contain information concerning physical condition and general health. The large number of doctors who die prematurely of heart disease points to the importance of securing regular health records of many physicians over a long period of time.

Physicians did not object to filling out repeated records in the years of their preparation for practice. They should not object to keeping a regular record of their progress in life.

G. H. OLDS, Waseca: The county secretary could keep track of his members, act as their agent, to some extent, in keeping a record of achievement.

W. F. WILSON, Lake City: We should apologize for having started so late this effort to keep accurate biographical records of all our members.

Informal Meetings

GEORGE EARL, Saint Paul: Our relations with the other professional groups who are concerned in the care of the sick are important and should be as close and friendly as possible. They should not take the form of a formal interpro-

fessional organization, however, since the interests and views of one group will not always be identical with others. An occasional general interprofessional meeting is highly advisable in every community. These large meetings should be supplemented by separate meetings between doctors and the separate groups, such as nurses, hospital administrators, technicians. Real progress has been made by the state Committee on Interprofessional Relationships using this method. Small informal discussion meetings serve to iron out mutual problems, advance mutual understanding.

J. N. LIBERT, Saint Cloud: County interprofessional meetings serve excellently to foster cooperation in worthwhile community projects.

L. H. FLANCHER, Lake Park: In Iowa, there is a formal interprofessional organization comprising doctors, dentists, druggists, veterinarians, nurses. According to Mr. W. L. Strunk who spoke to our society on the subject the organization has created better feeling between all groups and has fostered public health education. Legislation is acted upon by the groups separately and the organization as a whole is kept out of politics.

(Note: The Council recently voted against a similar organization in Minnesota.)

A. M. A. Survey

C. B. WRIGHT, Minneapolis: Many surveys of medical care have been made in this country. Often they have been made by laymen and they have failed to present an accurate picture of the situation. The American Medical Association, the American Public Health Association and the United States Public Health Service, finding all these surveys unsatisfactory from one point of view or another, recently decided to make a new and comprehensive survey of medical care and health problems all over the country.

They agreed that there is just one way to get at the facts: that is through the local medical societies in every county and district in the United States.

These organizations believe also that care of the sick is a local problem; that any changes in the plan of handling the problem should be under local control.

For an Honest Study

They have constantly opposed any bureaucratic system in Washington or anywhere else which

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permits lay officials to come between patient and doctor.

The first step then, is to make an honest and exhaustive survey with the coöperation of every county society in Minnesota and throughout the United States.

Armed with facts we can then go to Washington and say: These are the conditions in the United States and here are our recommendations based upon them.

It has been reported that some thirty to sixty per cent of our people are not getting medical care because they have no money to pay for it. We as doctors know that a large percentage of people do not get medical care because they do not want medical care whether they have money or not. With this survey we hope to get a real picture of the problem in America and analyze it sanely.

Emphasis on "Medical Indigent"

The interest in this survey will center among the so-called "medically indigent" more than upon definitely indigent. There is no doubt in the minds of anyone about the need for outside help in the care of the indigent. The question of medical care for low income groups on the other hand, is the subject of much difference of opinion and misinformation. It is to clarify the situation with respect to these groups and to determine upon plans suited to individual localities if they are needed that the American Medical Association has embarked upon this study.

A statistician and other expert assistance has been added for purposes of this study to the Bureau of Economics of which Dr. R. G. Leland is director. An advisory committee of representative persons from all over the country has been appointed to guide the bureau. The chairman of this committee is Dr. W. F. Braasch, Rochester, chairman of our Committee on Medical Economics. Dr. A. J. Chesley, secretary of the Minnesota Department of Health, is a member of the committee.

The Board of Trustees is determined to make this study complete and significant. They mean business. It remains now for our county societies to help them.

MR. C. R. CARLGREN, Saint Paul, Chairman, State Board of Control: It is important for the future of this state and nation and for the

future of civilization, I believe, that socialists and economists should be as effective in their own fields as the medical profession has been in its special field.

Personally, I cannot imagine a society so benevolent or so completely regimented that individual initiative can be eliminated. I firmly believe that we must plan our social order on a basis which allows freedom of initiative to the capable individual.

In the Right Direction

I should like to express to the organization of physicians our appreciation for the fine coöperation and the constructive suggestions given our department. It is my belief that in our Minnesota welfare program, at least, we are proceeding along sane and sound lines of development. The enactment of the County Welfare Board legislation last year was a tremendous step in the right direction because it retains to the individual county local responsibility and initiative.

There has been a tremendous increase in the appropriation to the State Board of Control; but it is chiefly due to the new social security activity which has placed Old Age Assistance, Aid to Dependent Children, Aid to the Blind, Services to Crippled Children under the direction of the Board's Division of Public Assistance. A little more than one out of every three persons of 65 or over in Minnesota is receiving Old Age Assistance.

New Hospital

The increase in the populations of our state institutions has been rather staggering in the last few years, especially in the hospitals for mental ailments. The seventh institution for the mentally ill with a capacity of 200 beds has just been completed at Moose Lake and, I believe, with the leveling off in commitments that seems to be going on now, it should be a long time before Minnesota will be obliged to add any more beds of this type.

There has been very little increase, since the so-called depression, in the correctional institutions. The programs for these institutions is important and the best possible program is the most economical one in the long run. Our training schools at Red Wing, for boys, and at Sauk Center, for girls, are purely training schools. The inmates are of a normal mental

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level, and for the most part, they have been more sinned against than sinning. Out of 250 paroled from Red Wing last year, seventy-four had no parents and almost none of the rest have normal home conditions. We have arranged a fine vocational program for these institutions and we now have fine medical care for them. At Red Wing this care is furnished by two local Red Wing clinics.

Qualified Staff

The penal institution for men is self-supporting by the work of the inmate population and the industries established have been of benefit to the farmers of the state. The inmates retain one-third of what they earn and two-thirds goes to their families. Those who have no families retain the whole amount and some are making considerable savings.

I contend that we cannot have proper correctional or disciplinary institutions without a properly qualified staff to participate in every part of the program. That means that we must have vocational experts, qualified medical men, psychologists and psychiatrists to guide in the improvement of mental as well as physical condition of our wards.

J. F. DuBois, Sauk Center, Secretary, State Board of Medical Examiners: The title of this paper—"The Public's Basic Science Law"—is used with a purpose. The Basic Science Law is a Public Health Law, for the public and not for the physicians. In fact, all of the medical laws on our statutes since the territorial days have been placed there for the benefit of the public and the sooner physicians make this fact known, the sooner our legislative problems will be reduced.

All the basic science law tries to do is to raise the standards of all the people caring for the sick. Can any of you think of a more altruistic law than that? Of necessity, it has curtailed cultists; but until cultists are adequately trained, they should be curtailed.

In the six years prior to 1938, Minnesota averaged 39 new chiropractors a year and in ten years under the basic science law we have averaged 1.4 per year. A good many states are now asking for Minnesota's set-up and wanting to know how we got it.

For a Strong Association

That brings me to you secretaries, as representatives of the county societies. Go back to your societies and insist that they back the state in the State Association's program.

In order to have a strong state association we must have close harmony with the county associations just as, if we are to have a strong American Medical Association, we must have strong state associations. Keep your county societies up to full strength. That is the first step to a strong state and national association.

A. J. CHESLEY, Executive Secretary, Minnesota Department of Health: There were 2,055 deaths from all forms of pneumonia in Minnesota in 1937. We estimate that approximately half of these deaths could have been avoided by use of the serum treatment; and we hope to have sufficient funds to provide serum for every case that needs it. In 1937, 662 specimens were typed; in 1938 to date (January to February 26) 361 specimens have been typed.

There are many details still to be worked out in our pneumonia program in Minnesota. One important phase of the program, the educational phase, will be helped, we believe, by showing with approval of the medical association, the pneumonia film made by the Metropolitan Life Insurance Company and the United States Public Health Service in public theaters.

(The film, a talking picture, shows the family doctor called out in the night to attend a mother, stricken with pneumonia. The sputum is promptly typed, serum treatment is given and the mother recovers. A trailer with information about the pneumonia program in Minnesota is to be added to the film. The Council approved the film.)

Successful Meeting

R. A. BURNS, Saint Paul: From 12,000 to 15,000 persons in Saint Paul heard the talks on syphilis given by members of the Ramsey County Medical Society in the course of the education campaign carried on by the Junior Chamber of Commerce, last fall, in coöperation with the society.

The project was proposed to the society by the junior association and the association took care of all arrangements for meetings. Preparation and selection of speakers was turned over to the Society's Speakers' Bureau. Forty or

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fifty members responded to the call for volunteers to participate. These volunteers met weekly, discussed material for their talks, submitted specimen speeches. By the time the campaign arrangements were all made, some 35 to 40 talks had been prepared, approved and typewritten. Both speakers and audiences were enthusiastic about the success of the campaign. Requests are still coming in for talks and engagements are booked up, now, until April.

The campaign began very fortunately with a large luncheon meeting addressed by Dr. Morris Fishbein. Everything went with remarkable smoothness. The Speakers' Bureau received considerable publicity and the demand for medical speakers on all subjects has increased.

We now have the organization, experience and machinery to undertake other public health campaigns as they may be needed in Saint Paul.

H. E. HILLEBOE, Saint Paul: There are approximately 1,000,000 children under twenty-one years of age in Minnesota and there are records in the State Board of Control at the present time of approximately 9,000 crippled children among them, the majority of whom are unable to pay for private medical care.

With Medical Advice

The State Board of Control is continuing to hospitalize a certain number of crippled children in private hospitals, to be cared for by private orthopedic surgeons. This will continue as long as there are waiting lists at the public hospitals in Minnesota. The orthopedic surgeons are paid for this service on a fee basis which was set up by the Minnesota-Dakota Orthopedic Club. For the year ending June 30, 1937, 20.5 per cent of our total budget of \$82,847.36 was paid out for physicians' fees and 42.8 per cent for hospital costs.

The majority of the members of the advisory committee for our service are eminent physicians of our state and it may be said, definitely, that the program is being carried out according to the most ethical standards of medical care.

MRS. HARLOW HANSON, Minneapolis, State Commander Women's Field Army: The Women's Field Army was created to fill the need for a connecting link so far as education is concerned, between the medical profession and the lay public. There has been no lag in the scientific attack on cancer, certainly, and yet, there

are still three times as many deaths from cancer as from tuberculosis. I asked the doctors why and they told me, "We think because we do not see the patient soon enough."

Want to be of Use

I have talked to the women in the women's clubs and I find that fear is the principal reason why women hesitate to consult a doctor early about symptoms that might mean cancer. That fear has its source in ignorance. When women have an opportunity to learn the scientific facts about cancer the fear lessens. Intelligent women will listen when we tell them that there is a cure for early cancer; that there are now 25,000 cases on record with the American Surgical Society showing five-year cures for cancer. I am convinced that the death rate from cancer can be cut if we can reach the women with this message. The Women's Field Army is under the direction of the medical profession. We want to be of use to the doctor and we welcome your suggestions.

W. A. O'BRIEN, University of Minnesota: To date, ten postgraduate medical institutes have been held in a little more than a year at the Center for Continuation Study with a total attendance of 256 physicians. There has been a total of 252 men on the teaching staff of the institutes. The courses have included sixty hours of instruction and 400 hours of intensive clinical and practical work. Thirty-two members of our faculty have come from the full-time teaching staff of the University; 115 from the part-time staff; twenty-four from the Mayo Clinic; sixteen from elsewhere in the state and three from out of the state. Students have come from Minnesota, North Dakota, Wisconsin, Iowa, Montana, California, Nebraska, Persia, China. Of the Minnesota men, twenty-one were from the twin cities, four from Duluth, 101 from elsewhere in the state. It is interesting to note that 40 per cent were in the age period between thirty-five and forty.

E. C. HARTLEY, Saint Paul: The so-called "Refresher Course," the name of which is going to be changed to something like "postgraduate study course," has just completed its first year. Last year there were courses in six centers throughout the state held at intervals over a period of six weeks. Average attendance ranged from nineteen to thirty-seven.

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This spring the course will be given in eight centers and it will last one full day, only. We are picking out instruction centers and making our plans in consultation with the office of the State Medical Association. We learned a great deal last year and hope to learn more this year to the end that these courses may justify the expenditure made for them out of social security funds.

The Council Meets

New Committee

Further evidence of the close and friendly relationship between the Division of Public Assistance and the State Association—a new committee has been appointed by the Council to confer informally with division officials. Many difficulties are encountered by these officials in interpretation of regulations involving health and physical condition. For help, they requested appointment of the medical committee. Dr. A. W. Adson, chairman, Dr. T. H. Sweetser, Dr. George Earl and Dr. J. M. Hayes (ex-officio) will serve.

Transients Again

A new survey of medical needs of transients is to be made in Minneapolis by the United States Public Health Service, Dr. Hayes reported to the Council. Nurses and social workers will question the transients.

Continuous After-Care

Tuberculous patients of state and county institutions will have continuous after-care and supervision if the plan reported to the Council for approval by Dr. H. E. Hilleboe works out as outlined.

Each patient will be reported to his family doctor at home a month before he leaves the sanatorium. The doctor will have all the case history and the recommendations for future care made by the sanatorium superintendent so that there will be no break in medical supervision. At the same time, if necessary, the relief office will receive an advance notice of the return of the patient to his home. If relief is needed, the worker can make necessary arrangements, visit the home and see that necessities of life are provided. The Council approved the plan.

Community Doctor?

Some of the residents of Puposky and the Pleasant Valley believe they need a doctor nearer than Bemidji medical men. They have written to the State Office for advice and assistance.

In 1934 a careful study was made by the Committee to Study Medical Care in Isolated Communities under President Savage's chairmanship. It was found, then, that roads were good and doctors were available. The greatest need appeared to be for public health education to persuade people to seek attention early.

The new complaint was discussed by the Council and referred for study to Beltrami county medical men with the suggestion that any plan for retaining a government doctor be discouraged as unwise and unnecessary.

Aid from the Auxiliary

The suggestion by officers of the Women's Auxiliary that Auxiliary members in Minnesota be asked to follow the lead of Pennsylvania women and clip all local papers carefully for news with any bearing upon doctors or medicine, was applauded by the Council.

Such clippings will be useful to keep up the biographical file on members; to keep committee chairmen informed on lay opinion; and to check use of legitimate newspaper material on health and medicine.

The aid of the women will be accepted with thanks.

Disposing of Samples

Many philanthropic organizations petition doctors for samples from pharmaceutical houses to distribute to their clients. The result is often the administration of remedies to the sick by unqualified if well intentioned lay persons. This practice was disapproved by the Council and should be discouraged. It was suggested that physicians save their samples to administer at their discretion to their own needy patients.

Rehabilitating Unemployables

In West Virginia the State Medical Association is directing a profitable program of rehabilitating otherwise unemployable relief clients and so removing them from relief rolls (See March issue, page 197). The program was outlined in detail to the Council and referred by that body to the Committee on Low Income and Indigent

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Problems for study with a view to the possibility of a similar project in Minnesota.

Protest

There are a few quirks in federal regulations that work hardships upon recipients of Social Security Aids and upon physicians also. Members of the Council discussed them, suggested that further inquiry be made of the American Medical Association as to the origin of the regulations and the advisability of protesting them.

One is the regulation of the Comptroller General which makes it impossible to budget for recipients of Old Age Assistance except on a current monthly basis. Another is the regulation which makes it impossible to pay physicians for initial examinations for eligibility required for recipients of some other Aids. The question of failure to pay physicians who care for the needy in their final illnesses was also discussed in view of the fact that undertakers' funds are provided.

Memorial Fund Complete

The final \$80.00 needed to make the \$2,000 goal set for the Herman M. Johnson Memorial Fund was subscribed by the Council members. The fund will now be invested according to the resolution passed by the House of Delegates and only interest will be used for the lectures on medical economics that will bear his name.

The first lecture in the annual lectureship will be given by Governor Benson Friday, July 1, in connection with the 85th annual meeting in Duluth.

Facts and Figures

A few copies of a pamphlet called "Facts and Figures on Medical Relief in Minnesota" are still available at the state office.

This pamphlet was prepared for the benefit of officers and contact committeemen of county and district societies and contains the latest available information on welfare and relief services in each county, also on the funds spent for these services. There is also a map showing how medical care for relief clients is handled in virtually every county in the state.

The material has proved to be of such interest to others besides the county society officials that Washington, Chicago and some of the official agencies are rapidly exhausting the supply.

There is information, in the pamphlet, conveniently arranged for comparison and study

that cannot be secured in this form from any official source of fact and figures. For this reason anyone who has a special interest in welfare and relief matters from the medical point in Minnesota should see a copy. Physicians who attended the County Officers' Meeting in Saint Paul have copies and will lend them, perhaps, since only a handful still remain at headquarters.

Sound Public Policy

Monthly Editorial Prepared by the Medical Advisory Committee

Today, as never before, professional groups are being scrutinized by lay people, and every opportunity is taken to deride and break down the time-tested ethics of these groups.

Your Medical Advisory Committee believes that perhaps we, the members of the medical profession, are at fault to a great extent in this loss of confidence, that the dignity of our calling is being lost sight of by us in the search for the "pot of gold." Especially is this true when we find doctors testifying in court on a contingent basis, their fees depending on the winning or losing of the case at hand. Will their testimony be unbiased and for the best interest in a court of justice under this arrangement? Does it not bring disrepute on all medical testimony to sell our knowledge for a "mess of pottage"? Why not be honest with ourselves and the lawyers in the case—an honest fee for an honest opinion.

The Principles of Medical Ethics, Article VI, Section 5, reads as follows:

"It is unprofessional for a physician to dispose of his professional attainments or services to any lay body, organization, group or individual, by whatever name called, or however organized, under terms or conditions which permit a direct profit from the fees, salary or compensation received to accrue to the lay body or individual employing him. Such a procedure is beneath the dignity of professional practice, is unfair competition with the profession at large, is harmful alike to the profession of medicine and the welfare of the people, and is against sound public policy."

This means that entangling alignments between doctors and lawyers are against sound public policy, and no member of our association should be guilty of such conduct. Remember, "As ye sow, so shall ye also reap." If we are going to elevate our standing in the eyes of our communities, we must do it ourselves. "Honesty is the best policy" in court as well as in other types of consultation.

Minnesota State Board of Medical Examiners

Minneapolis Quack Sought by Sheriff

Re: State of Minnesota vs. Francis Howard Punchard, Sr., alias J. Francis Clark.

Sheriff John P. Wall of Minneapolis holds an order for the arrest and commitment of Francis Howard Punchard, Sr., alias J. Francis Clark, fifty-eight years of age. On February 17, 1938, the Honorable Arthur W. Selover, Judge of the District Court of Hennepin County, issued an order vacating the stay of sentence previously given Punchard on October 5, 1936, by Judge Leary. Punchard, at that time, was sentenced to six months in the Minneapolis Work House and a stay given him on the condition that he leave the State of Minnesota and remain out of it for a period of not less than five years. Punchard was seen in the Lowry Medical Arts Building, St. Paul, on February 16, 1938, by a representative of the Minnesota State Board of Medical Examiners. He stated at that time that he had been teaching at the Minnesota Chiropractic College, 1824 15th Avenue South, Minneapolis. He was ordered to report to the County Attorney's office the following morning but failed to show up. The order of Judge Selover followed. At the time this article was written the Sheriff's office had been unable to locate Punchard. It has been reported, however, that Punchard was again in the Lowry Medical Arts Building on Monday, February 21.

Punchard is a rather well known quack, having been convicted in Chicago in 1932, on a charge of practicing medicine without a license. He makes rather elaborate representations as to who he is and where he has obtained his education. He has represented himself, on occasion, as being a graduate of Oxford, the University of Maryland, and as having taught at the University of Minnesota. Punchard holds no diploma from any recognized medical school, nor is he licensed to practice medicine anywhere in the United States.

The Medical Board respectfully requests that it be immediately notified by telephone, Cedar 2064, Saint Paul, if Punchard comes to the attention of any members of the medical profession in this state.

Dakota County Janitor Pleads Guilty to Abortion

Re: State of Minnesota vs. Kish.

On March 1, 1938, Frank Kish, forty years of age, entered a plea of guilty to an information charging him with the crime of abortion. The plea of guilty was entered before the Honorable Richard A. Walsh, Judge of the District Court for Ramsey County. After hearing the facts, Judge Walsh sentenced the defendant to a term of eighteen months at hard labor in a state penal institution.

Kish, who stated he was born in 1897 at Coaldale, Virginia, and who has resided in Minnesota since 1916, was arrested on February 24, 1938, following a joint investigation made by the Minnesota State Board of Medical Examiners, the County Attorney's office and the Sheriff's office of Ramsey and Dakota Counties. Kish was employed as a janitor at School District Number 5 of Dakota County. For the past three years he has been performing an occasional criminal abortion, admitting some twenty to twenty-five abortions. Some of these were performed at the school in Dakota County, and others at the homes of the women in Saint Paul. Upon being questioned by Judge Walsh, Kish stated that he had only an eighth grade education and no medical training whatsoever. He used a catheter in his work and in some cases administered ergot. He charged whatever he could get, the fee varying from \$5.00 to \$30.00 per case. The defendant is married and the father of four children.

List of Physicians Licensed by the Minnesota State Board of Medical Examiners on February 11, 1938

- January Examination*
- Bagley, Charles Miller, Stanford U., M.D., 1937, Duluth, Minn.
 Bagwell, John Spurgeon, Jr., Baylor U., M.D., 1936, Rochester, Minn.
 Bailey, Allan Archibald, U. of Toronto, M.D., 1935, Rochester, Minn.
 Baumgartner, Florian Herman, U. of Minn., M.B., 1937, Saint Paul, Minn.
 Caspers, Carl Gerald, U. of Minn., M.B., 1937, Saint Paul, Minn.
 Cochrane, Byron Barlow, U. of Minn., M.B., 1937, Saint Paul, Minn.
 Code, Charles Frederick, U. of Manitoba, M.D., 1934, Rochester, Minn.
 Davis, Luther Forest, U. of Minn., M.B., 1937, Minneapolis, Minn.
 Doss, Alexander Keller, Tulane U., M.D., 1934, Rochester, Minn.
 Ferris, Deward Olmstead, Queen's U., M.D., 1931, Rochester, Minn.
 Fisher, Herbert Calvin, Cornell U., M.D., 1935, Rochester, Minn.
 Fitzsimons, William Edmund, U. of Minn., M.B., 1937, Saint Paul, Minn.
 Giffin, Herbert Martin, Johns Hopkins, M.D., 1935, Rochester, Minn.
 Giffin, Lewis Albee, Harvard U., M.D., 1935, Rochester, Minn.
 Gilman, Lloyd C., U. of Minn., M.B., 1937, Minneapolis, Minn.
 Glabe, Robert Alfred, U. of Minn., M.B., 1937, Duluth, Minn.
 Hackie, Edward Anthony, U. of Manitoba, M.D., 1937, Minneapolis, Minn.
 Hargis, William Huard, Jr., U. of Texas, M.D., 1936, Rochester, Minn.
 Harris, Leon Dunham, U. of Minn., M.B., 1937, Minneapolis, Minn.
 Howard, E. Graham, U. of Minn., M.B. and M.D., 1935, Minneapolis, Minn.
 Jenovese, Joseph Francis, U. of Pa., M.D., 1930, Rochester, Minn.
 Jones, Orville Hugh, U. of Minn., M.B., 1937, Minneapolis, Minn.
 Kindschi, Leslie George, Harvard, M.D., 1935, Rochester, Minn.
 Lauer, Dolor John, U. of Minn., M.B., 1937, Duluth, Minn.
 Lovering, Joseph, U. of Pa., M.D., 1934, Rochester, Minn.
 Marshall, Mary Emily, U. of Toronto, M.D., 1935, Rochester, Minn.
 Martin, Dwight Lewis, U. of Minn., M.B., 1937, Saint Paul, Minn.
 Meller, Charlotte Louise, U. of Minn., M.B., 1937, Saint Paul, Minn.
 Meller, Robert Louis, U. of Minn., M.B., 1937, Saint Paul, Minn.
 Pansch, Frank Norman, Northwestern, M.B., 1936; M.D., 1937, Rochester, Minn.
 Quill, Thomas H., Georgetown U., M.D., 1933, Rochester, Minn.

IN MEMORIAM

Randall, Karl Chandler, II, U. of Pittsburgh, M.D., 1935, Rochester, Minn.
Roxburgh, Douglas Brant, U. of Alberta, M.D., 1932, Rochester, Minn.
Sako, Wallace Saburo, U. of Minn., M.B., 1935; M.D., 1936, Minneapolis, Minn.
Schamber, Walter Fred, Rush Med. Col., M.D., 1937, Duluth, Minn.
Schlicke, Carl Paul, Johns Hopkins, M.D., 1935, Rochester, Minn.
Schulte, Thomas Lacoste, Stanford U., M.D., 1936, Rochester, Minn.
Schunke, Gustave Bernard, Stanford U., M.D., 1936, Rochester, Minn.
Schwartz, Eleazer Robert, U. of Minn., M.B., 1936; M.D., 1937, Minneapolis, Minn.
Sharpe, Wendell Smith, Johns Hopkins U., M.D., 1935, Rochester, Minn.
Smith, James John, St. Louis U., M.D., 1937, Saint Paul, Minn.
Smith, Kendrick Adelbert, U. of Chicago, M.D., 1937, Rochester, Minn.
Sommers, Ben, U. of Minn., M.B., 1937, Saint Paul, Minn.
Tesch, Gordon Harrison, U. of Minn., M.B., 1937, Saint Paul, Minn.
Tessmer, Carl Frederick, U. of Pittsburgh, M.D., 1935, Rochester, Minn.
Textor, Jerome D., U. of Minn., M.B., 1936; M.D., 1937, Minneapolis, Minn.
Thigpen, Francis Marion, Tulane U., M.D., 1934, Rochester, Minn.
Tooke, Thomas Bell, Jr., Tulane U., M.D., 1936, Rochester, Minn.
Usher, Francis Cowgill, U. of Pa., M.D., 1935, Rochester, Minn.
Wadd, Clifford Theodore, U. of Minn., M.B., 1937, Minneapolis, Minn.
Waggoner, Richard Perham, U. of Ore., M.D., 1935, Rochester, Minn.
Wilcox, Leigh Edgar, U. of Louisville, M.D., 1933, Rochester, Minn.
Willson, Donald Maclean, U. of Pa., M.D., 1935, Rochester, Minn.
Wittels, Theodore Saul, U. of Minn., M.B., 1936, Minneapolis, Minn.

By Reciprocity

Baker, Ellis Ellsworth, U. of Neb., M.D., 1932, Gillette, Wyo.
Gillesby, William James, U. of Ill., M.D., 1932, Chisholm, Minn.
Puunala, Marie Bepko, U. of Ill., M.D., 1935, Cloquet, Minn.

National Board Credentials

Burge, Raymond E., Duke U., M.D., 1934, Minneapolis, Minn.
Derbyshire, Robert Cushing, Johns Hopkins, M.D., 1936, Rochester, Minn.
Limbert, Edwin Manning, U. of Toronto, M.D., 1934, Rochester, Minn.
Mueller, Roland Frederick, Wash. U., M.D., 1929, Two Harbors, Minn.
Nesbitt, Samuel, Harvard U., M.D., 1935, Rochester, Minn.

APRIL, 1938

In Memoriam

George Sheryl Cabot

1899-1937

D R. GEORGE S. CABOT, of Jamestown, North Dakota, died on December 16, 1937, following an emergency operation. Dr. Cabot was associated in practice with his brother Dr. Verne S. Cabot, and his brother-in-law, Dr. Arthur A. Wohlrabe, in Minneapolis, from 1925 until 1935, when he moved to Jamestown.

Born August 2, 1899, in Minneapolis, Dr. Cabot attended the elementary and high schools in Minneapolis and received his M.D. from the University of Minnesota medical school in 1923.

Dr. Cabot was a member of the Hennepin County Medical Society and the Minnesota State Medical Association while residing in Minneapolis, and transferred his membership to the North Dakota State Medical Association upon moving to North Dakota. He was a member of the Alpha Kappa Kappa medical fraternity, and of the Masonic order.

Dr. Cabot is survived by his widow, whose maiden name was Grace McCrum, and two sons, Hugh, aged nine, and Allyn, aged six. Besides a brother, Dr. Verne S. Cabot, and a sister, Mrs. Arthur A. Wohlrabe, both of Minneapolis, Dr. Cabot is survived by another brother, Dr. Clyde N. Cabot of Calgary, Canada.

Joseph Edward Honore Garand

1874-1937

D R. J. E. H. GARAND, for the past forty years a practicing physician of Dayton, Minnesota, passed away on December 12, 1937, at the age of sixty-three, from pneumonia.

Born at Sherbrooke, Quebec, February 14, 1874, Dr. Garand attended local schools and received his medical degree from Laval University, Montreal, where he graduated with honors.

Arriving in Dayton in 1900, Dr. Garand was active in local affairs. At different times he was mayor of Dayton, clerk of the village and a member of the school board.

Dr. Garand is survived by his widow and a daughter, Mrs. Honorine Dupont, of Minneapolis.

The Cornell Cancer Treatment

Recently newspapers contained an announcement to the effect that Dr. Beaumont Cornell of Fort Wayne, Ind., had discovered an amazing treatment for cancer. Briefly the treatment consists of the injection into patients with cancer of a product which he has labeled Anomim and which represents extracts made from the testicular and ovarian tissues of cattle. It was claimed for this new extract that it prevented the formation of metastases, that pain ceased and that tumors liquefied. The only evidence is the unsupported statement of the author. The work is all recent; time is required to determine whether or not cancer is really cured in any patient. The methods of promotion and the publicity associated with the announcement of this method would seem to be wholly outside the usual accepted scientific procedures. (J. A. M. A., Feb. 26, 1938, p. 656.)

◆ OF GENERAL INTEREST ◆

Dr. L. M. Roberts, of Little Falls, has retired after forty-eight years of active practice.

* * *

Dr. V. J. Telford has returned to Litchfield from Denver, and has resumed practice.

* * *

Dr. and Mrs. E. G. Bannick, of Rochester, are moving to Seattle, where they plan to make their home.

* * *

The *Journal of School Health* for March, 1938, announces Dr. Lillian L. Nye's Fellowship in the American School Health Association.

* * *

Dr. W. L. Sibley, formerly located at Rochester, Minnesota, has moved to Roanoke, Virginia, where he is affiliated with the Lewis-Gale Hospital.

* * *

Dr. P. O'Hair, pioneer Waverly physician, celebrated his ninetieth birthday on February 24. He retired from active practice in 1930.

* * *

Dr. and Mrs. Robert J. Hill, formerly of Saint Paul, have moved to Anoka, where Dr. Hill has established his practice.

* * *

Dr. and Mrs. William A. O'Brien, of Saint Paul, are receiving congratulations on the birth of a son, Patrick, born March 17.

* * *

Dr. C. G. Ochsner, of Wabasha, was elected president of the Chamber of Commerce at the organization meeting held recently.

* * *

Dr. and Mrs. L. C. Culligan, Sibley Highway, are receiving congratulations on the birth of a daughter, born March 3.

* * *

Dr. L. B. Wilson, of Rochester, addressed the Hi-Y club there early in March on the subject of "How to Spend Leisure Time."

* * *

Drs. W. E. Johnson and E. W. Wahlberg, of Morgan, have moved into new quarters in the former Farmers and Merchants Bank Building.

* * *

Dr. F. Schleinitz has settled in Avon, where he will engage in the practice of medicine. His office and residence are located in the new hospital building there.

* * *

Dr. Julian F. Du Bois, secretary of the Minnesota State Board of Medical Examiners, was elected vice president of the Federation of State Medical Boards of the United States at its annual meeting held in Chicago in February.

* * *

Dr. F. N. Solsem, of Sacred Heart, has sold his practice to Dr. R. Erickson, a graduate of the Medical School of the University of Minnesota. Dr. Solsem

plans to take up graduate work at the Medical School of the University of Colorado, after a visit with his daughter and son-in-law in Denver.

* * *

Dr. S. A. Slater, of Worthington, has been appointed on a national committee of five to study the coordination of federal, state and local programs against tuberculosis, and recommend a workable plan. The appointment was made by Dr. J. A. Myers of Minneapolis, president of the National Tuberculosis Association.

* * *

Dr. W. P. Olson, of the Gaylord Hospital, has announced that his son, Dr. Duane Olson, will soon become associated with him in the conduct of the Gaylord Hospital, and in general practice. Dr. Duane Olson is a graduate of the University of Minnesota and is just completing his internship at General Hospital, Minneapolis.

* * *

Dr. S. A. Forestiere will return to Pine River from New York City about April 1 to take over the St. Matthew Hospital, which he has purchased from Dr. A. J. Button. Dr. Button opened the hospital January 1, 1934, and has operated it since that time. It was first known as the Holman Hospital, but was recently incorporated as St. Matthew Hospital.

* * *

Dr. and Mrs. John S. Lundy of Rochester sailed for Europe late in March. Dr. Lundy expects to visit clinics in Vienna and other medical centers in Germany, France, Switzerland, Holland and England. They will return to Rochester about June 1.

Before sailing, Dr. Lundy will address a meeting of the American Society of Anesthetists in New York, his topic being "Intravenous Barbiturate Anesthesia."

* * *

Dr. and Mrs. P. S. Hench, of Rochester, have sailed for Europe. Dr. Hench attended the meeting of the International Congress on Rheumatism and Hydrology at Oxford, March 26 to 31, and will address the International Conference on Rheumatic Disease which is being held in Bath, England. His topic will be "The Effect of Spontaneous and Induced Jaundice on Rheumatoid Arthritis and Fibrosis."

Dr. Hench will also visit clinics in England and Scotland.

* * *

Dr. Edgar H. Norris, for the past four years a teaching fellow in the Department of Pathology at the University of Minnesota Medical School, during which period he has made a number of important contributions to medical literature, has been appointed Head of the Department and Professor of Pathology in Wayne University College of Medicine, Detroit, Michigan. He will assume his duties in the early fall. Dr. Norris graduated from the University of Minnesota Medical School in 1919. He practiced surgery for a number of years in Saint Paul before devoting himself to Pathology.

MINNESOTA MEDICINE

◆ REPORTS and ANNOUNCEMENTS ◆

MEDICAL BROADCAST FOR APRIL

The Minnesota State Medical Association Morning Health Service.

The Minnesota State Medical Association broadcasts weekly at 9:45 o'clock every Saturday morning over Station WCCO, Minneapolis and Saint Paul (810 kilometers or 370.2 meters).

Speaker: William A. O'Brien, M.D., Associate Professor of Pathology and Preventive Medicine, Medical School, University of Minnesota. The program for the month will be as follows:

- April 2—10th Anniversary.
- April 9—Arteriosclerosis.
- April 16—Glaucoma.
- April 23—Brain Tumors.
- April 30—Dental Research.

AMERICAN ASSOCIATION FOR THE STUDY OF GOITER

The third international goiter conference will convene in Washington, D. C., September 12 to 14, 1938. English will be the official language, but interpreters will be furnished for papers read in a foreign tongue. Further information may be obtained from Dr. Allen Graham, chairman of the Program Committee, 2020 East 93rd Street, Cleveland, Ohio.

AMERICAN BOARD OF OPHTHALMOLOGY

The American Board of Ophthalmology announces that in 1938 it will hold examinations in San Francisco, June 13, during the American Medical Association meeting; Washington, D. C., October 8, during the American Academy of Ophthalmology and Oto-Laryngology meeting; Oklahoma City, November 14, during the Southern Medical Association meeting.

The American Board of Ophthalmology has established a Preparatory Group of prospective candidates for its certificate. The purpose of this Group is to furnish such information and advice to physicians who are studying or about to study ophthalmology as may render them acceptable for examination and certification after they have fulfilled the necessary requirements. Any graduate or undergraduate of an approved medical school may make application for membership in this Group. Upon acceptance of the application, information will be sent concerning the ethical and educational requirements, and advice to members of the Group will be available through preceptors who are members or associates of the Board. Members of the Group will be required to submit annually a summarized record of their activities.

The fee for membership in the Preparatory Group is ten dollars, but this amount will be deducted from the fifty dollars ultimately required of every candidate for examination and certification. For sufficient

reason, a member of the Preparatory Group may be dropped by vote of the Board.

ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS

The annual meeting of the Association of Industrial Physicians and Surgeons and Midwest Conference on Occupational Diseases will be held at the Palmer House, Chicago, June 6-9, 1938. The purposes of the organization are minimizing the morbidity and mortality in working people from industrial accidents and diseases, and all physicians and surgeons interested in this phase of preventive medicine are urged to attend. A. G. Park, 540 N. Michigan Avenue, Chicago, is Convention Manager, and is in charge of exhibits.

CITIZENS AID SOCIETY

The Cancer Institute Committee of the University of Minnesota Medical School has announced the 1938 Citizens Aid Society Lecture which will be presented at the Medical School on the evening of Tuesday, April 12. Dr. Edgar Allen of Yale University Medical School will present this Lecture, the title of which will be "Ovarian Hormones in Relation to Female Genital Cancer."

POSTGRADUATE COURSE FOR PHYSICIANS IN OBSTETRICS AND PEDIATRICS

Beginning in May the second state-wide Postgraduate Course for Physicians in Obstetrics and Pediatrics will be given in eight centers throughout the state. This is the course presented through the co-operated efforts of the Minnesota State Medical Association, the Medical School of the University, and the State Department of Health. It is financed by funds coming to the Division of Child Hygiene of the State Department of Health through Society Security appropriations.

The centers and dates for this year are, as follows:

- May 4—Crookston
Winona
- May 11—Hibbing
Willmar
- May 18—Albert Lea
Fergus Falls
- May 25—Worthington
Bemidji

The arrangements will be different this year from last. The sessions in each center will last all day, and the entire material will be presented in that one day. There will be four lectures in obstetrics and four in pediatrics given by two obstetricians and two pediatricians. This arrangement was decided upon after considerable discussion in order to meet some of the objections which arose last year. Particularly, that the work extended over too long a period, making it

REPORTS AND ANNOUNCEMENTS

difficult for the men to arrange for attendance. It was felt by most of those who discussed the question that in general the physician in practice could more readily arrange for one full day away from his office than he could for parts of a number of successive days.

Complete schedules for the course and an outline of the material to be presented will be mailed by Mr. R. R. Rosell, Executive Secretary of the Minnesota State Medical Association, to the physicians in and about the eight centers which have been selected.

RESERVATIONS, STATE MEETING

Hotel reservations for the 85th annual meeting of the Minnesota State Medical Association to be held in Duluth, June 29, 30 and July 1, should be made immediately according to the Committee on Local Arrangements of which Dr. R. J. Moe is chairman.

One of the best programs in the history of the organization has been arranged and an attendance of more than twelve hundred is expected from Minnesota and from surrounding states. Most of those who attend will plan, also, to take advantage of the dates and extend their trips, with their families, until after the Fourth of July holiday.

Several other organizations will be meeting in Duluth at the same time, according to the Committee, and will require accommodations.

Meeting headquarters are at the Hotel Duluth. A list of eight additional hotels has been selected by the committee, however, and excellent accommodations can be secured in any of them. The complete list with rates is printed below. Reservations should be made direct with the hotel chosen.

Hotel	Single	Double
Hotel Duluth, 231 E. Superior St. (With Bath)	\$3.00 & up	\$4.00 & up
Spalding Hotel, 5th Ave. W. & Superior St. (Without Bath)	1.50 & up	2.50 & up
(With Bath)	2.50 & up	3.25 & up
Lemon Hotel, 6th Ave. W. & Superior St. (Without Bath)	1.50 & up	2.50 & up
(With Bath)	2.25 & up	3.25 & up
Holland Hotel, 11 N. Fifth Ave. W. (Without Bath)	1.75 & up	2.75 & up
(With Bath)	2.50 & up	3.50 & up
Lincoln Hotel, 317 W. 2nd St. (Without Bath)	1.50 & up	2.50 & up
(With Bath)	1.75 & up	2.75 & up
McKay Hotel, 430 W. 1st St. (Without Bath)	1.25 & up	2.00 & up
(With Bath)	1.75 & up	2.75 & up
Cascade Hotel, 101 W. 3rd St. (Without Bath)	1.50 & up	2.00 & up
(With Bath)	2.00 & up	3.00 & up
Arrowhead Hotel, 225 N. 1st Ave. W. (Without Bath)	1.00 & up	2.00 & up
(With Bath)	2.00 & up	3.00 & up
Hamilton Hotel, 1418 E. Superior St. (Without Bath)	1.50 & up	2.00 & up
(With Bath)	2.50 & up	3.50 & up

WABASHA AND WINONA COUNTIES

The seventh annual joint meeting of the Wabasha and Winona County Medical Societies and the thirteenth annual dinner tendered by the Sanatorium Commission to the physicians of the counties served was held at Buena Vista Sanatorium, Wabasha, Minnesota, on Monday evening, March 14. There were thirty-four

in attendance, including doctors and four lay members of the Sanatorium Commission.

Dr. H. T. Sherman, president of the Wabasha County Society, officiated as toastmaster. Dr. James M. Hayes, president, and Mr. R. R. Rosell, executive secretary of the State Medical Association, gave talks on the aims and purposes of the State Association. Dr. I. W. Steiner, secretary of the Winona County Society, gave a report on the recent County Officers' Conference in Saint Paul.

The following papers were presented:

"Acute Abdominal Conditions," DR. JAMES M. HAYES, Minneapolis.

"Diagnosis and Treatment of Primary Carcinoma of the Lung," DR. THOMAS J. KINSELLA, Minneapolis.
"Intractable Nasal Hemorrhage, with Report of Case Requiring Ligation of the External Carotid Artery," DR. GEORGE L. LOOMIS, Winona. Discussion was opened by Dr. Eli E. Christensen, Winona.

WASHINGTON COUNTY

The regular meeting of the Washington County Medical Society was held March 8 with good attendance. The Secretary reported on the County Officers' Meeting and following that there was a discussion on the welfare board's activities.

There was also a report on the Mantoux tests showing that out of 305 pupils only twelve refused to take the test. There were forty-four pupils who were positive reactors, forty-three of whom were x-rayed. One pupil refused. There were also fourteen adults (teachers) tested, with three positives. Three children outside of the school were x-rayed. There was also a report on the vaccination questionnaire which disclosed the fact that quite a number of pupils throughout the grade schools had not been vaccinated.

Dr. E. V. Strand, of Bayport, spoke to the Society about his trip East. He visited the medical centers in Montreal, Boston, New York, Baltimore, and Washington. His experiences were well outlined and told in a manner which was enjoyable to listen to as well as instructive. He also mentioned the up-to-date equipment in the hospitals in these medical centers.

Dangers of Sodium Perborate in the Mouth

The most prominent ingredient used in recent years in dentifrices and mouthwashes for antiseptic purposes is sodium perborate. This has been inspired, no doubt, by its alleged efficiency in combating Vincent's infection. According to the clinical observations recorded in a recent questionnaire study by Isador Hirschfeld, chairman of the Committee on Scientific Investigation of the American Dental Association, perborate may cause (1) painful chemical burns of the oral mucosa (including the gingivæ); (2) less painful or entirely painless burns producing a milky-white discoloration, especially of the marginal gingivæ; (3) an inflamed condition of the oral mucosa, which predisposes the gingivæ and mouth generally to ready abrasion and infection through minimal traumatization, and (4) a form of "hairy tongue" which in some instances causes gagging or irritation of the soft palate and pharynx. Ample examples of the danger of this form of self medication have now been recorded and adequate proof offered. (J. A. M. A., Feb. 5, 1938, p. 445.)

WOMAN'S AUXILIARY

WOMAN'S AUXILIARY

MRS. J. F. NORMAN, Crookston, President
MRS. A. A. PASSER, Olivia, Editor

AN OPEN LETTER TO THE MEMBERS OF THE STATE MEDICAL AUXILIARY

Dear Auxiliary Members:

There are a number of matters which I want to bring to your attention, and I appreciate the privilege of communicating with you through the pages of MINNESOTA MEDICINE.

You will be interested to know that the Auxiliary will again show a nice gain in membership this year; at this writing, ten County Auxiliaries have reported a larger membership than in previous years. This is encouraging, for the reason that if the State Auxiliary wishes to continue as a vital reserve force for the Medical Association, it is necessary to grow numerically. The various groups are to be commended for the prompt attention given the payment of dues during March; as a result, the State, in turn, will be in a position to remit dues promptly to the National Auxiliary.

The mid-winter meeting of the Executive Board was held in Minneapolis on January 14 because it was possible for our National President, Mrs. Augustus Kech, to be with us on that day. Mrs. Kech recommended that the Minnesota Auxiliary assist the Medical Society by establishing a Clipping Bureau. Your president placed the matter in the hands of the Medical Advisory Board, and at a meeting of the Council which followed the County Officers' meeting on February 26, the idea was enthusiastically endorsed by the Council which went on record as stating that the Medical Association would accept this service with appreciation. You will have the privilege of deciding definitely about this as a project at the annual meeting; in the meantime, if you are interested, start clipping! Clip everything from your local newspapers which has any reference to medicine or local physicians; editorials are of especial interest. This service will be of great value to the Medical Association and we are hoping it will receive your active co-operation.

Another recommendation which was made by a special committee and adopted at the Board meeting, was to the effect that County Auxiliaries follow the State Constitution, Article X, with reference to delinquent members of said Auxiliaries. Other matters of interest to all the members were discussed at the Board meeting and will be included in the reports at the annual meeting.

The State Meeting will be held in Duluth June 29, 30 and July 1, and the annual business meeting of the Auxiliary will be held on Thursday, June 30. Plans are going forward to make this meeting one of lasting inspiration, and it is not too early for you to make your plans to attend. Duluth is famous as a hostess city and the women of the St. Louis County Auxiliary are busily engaged in making preparations for the

meeting. There is talk of a trip on Lake Superior on July 1, so try to have your plans include all three days of the convention. With your assistance and co-operation, the sixteenth annual meeting of the Minnesota State Medical Auxiliary will be a memorable one.

LORETTA M. NORMAN, President.

The Vitamin C Content of Commercially Canned Tomato Juice and Other Fruit Juices as Determined by Chemical Titration

The Council on Foods reports that many physicians have inquired about the vitamin C content of canned fruit juices. In order to obtain further information on this point, Dr. E. M. Bailey of the Connecticut Agricultural Experiment Station, New Haven, has supplied comparative data on the citamic acid content of Council accepted products by chemical titration. This survey covers all canned fruit juices which, at the time of the examination, were privileged to display the seal of the Council on Foods. The figures show that all brands of the canned fruit juices examined contained appreciable quantities of vitamin C. In terms of the average approximate number of international units of vitamin C per hundred cubic centimeters, the values are: pineapple juice 300, tomato juice 400, grapefruit juice 750, orange juice 900 and lemon juice 1,000. From the figures available, it would appear that canned orange juice is only slightly less potent in vitamin C than the fresh juice from which it is made. Approximately two and one-half volumes of canned tomato juice should be given in order to provide the vitamin C equivalent of one volume of fresh orange juice. If other juices are to be substituted, it is probable that the substitution could be made, other things being equal, on the basis of the vitamin C content. (J. A. M. A., Feb. 26, 1938, p. 650.)

Udga Tablets

The Bureau of Investigation reports that according to a Federal Trade Commission release for May 21, 1937, the Commission ordered Udga, Inc., to cease and desist from representing "through advertisements, circulars or testimonials, or in any other manner, that the product would cure stomach ulcers, gastritis, indigestion, dyspepsia and various other stomach ailments and diseases, including those caused or reputed to be caused by hyperacidity." William Fraser of St. Paul is president of Udga, Inc. Fraser is a voluminous advertiser and, among other advertising devices, publishes *Fraser's News*, a puff sheet devoted to the wonders of Udga Tablets. From Fraser's "Column of Health Comment" we learn: "Years ago, after I left the army . . . Back home in St. Paul, Minn., I learned first hand of a formula developed by a renowned physician for treatment of stomach acidity—that distressing condition so little understood by doctors generally . . ." Nowhere in the Fraser advertising available to the Bureau of Investigation is there any clue that Mr. Fraser has had any training in pharmacy, chemistry, physiology, pathology or therapeutics. According to the government chemists' analysis, each Udga Tablet contained about 9 grains of sodium bicarbonate, about 9 grains of bismuth subnitrate and about 8 grains of magnesium oxide. The limited value of these common drugs is well known to every physician. Certainly they are not to be relied on in the indiscriminating and unsupervised treatment of gastric ulcer. (J. A. M. A., August 21, 1937, p. 605.)

PROCEEDINGS of the MINNESOTA ACADEMY of MEDICINE

Meeting of January 12, 1938

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, January 12, 1938. Dinner was served at 7 o'clock and the meeting was called to order at 8:15 by the president, Dr. R. T. LaVake.

There were fifty-nine members and two guests present.

This being the annual meeting at which the President's address is read, no business was taken up.

DIAPHRAGMATIC HERNIA

E. M. JONES, M.D.
Saint Paul

Dr. E. M. Jones, retiring president, read his address on the above subject, illustrated with lantern slides. He requested that the paper be discussed. (Complete paper to appear later in MINNESOTA MEDICINE.)

Abstract

The diagnosis and treatment of diaphragmatic hernia has received increasing attention during the past few years. There is no reason to assume the condition to be more prevalent than heretofore, but rather that improvement in diagnostic methods has made its presence more easily and thus more frequently proven. Development in roentgenological technic, together with accurate clinical observation, has resulted in the placing of diaphragmatic hernia in the list of common conditions.

In 1853, Bowditch reviewed the subject of diaphragmatic hernia and reported a case seen at the Massachusetts General Hospital, observing that earlier writers believed that a wound of the diaphragm was always fatal.

Diaphragmatic herniae are considered true or false depending on whether or not a sac is present. They are further divided into congenital and acquired, the latter possibly traumatic in origin.

These various types of herniae are discussed from the standpoint of their occurrence and symptoms presented. Various points are emphasized that will aid in the diagnosis. There is also discussion of the congenital short esophagus and the surgical importance of differentiating it from a diaphragmatic hernia is emphasized.

Reduction of the hernia with repair of the hernial opening is the only means of definitely relieving the symptoms. As long as strangulation does not occur, the presence of abdominal viscera within the chest is not incompatible with life.

Many aspects of the treatment of diaphragmatic hernias are discussed.

Five cases of diaphragmatic hernia that have been operated upon are discussed and lantern slides were shown demonstrating the condition before and after

surgical repair. There are three cases of esophageal hiatus hernia and two that are traumatic. Two slides were shown of a congenital diaphragmatic hernia.

In this group of cases three were cured, there was one recurrence and one death.

Discussion

DR. J. F. CORBETT, Minneapolis: I want to congratulate Dr. Jones on his series of cases. It is master surgery and very few of us can point to so many cases. I saw one case that was a potential diaphragmatic hernia. This boy had been shot in the lower part of the left chest and when admitted to the hospital his condition was bad. The most marked symptoms were abdominal, but no fluid could be demonstrated in the abdomen. There was some blood in the chest and there was pain referred to the shoulder. For that reason, by means of an intratracheal positive pressure apparatus, I ventilated the lungs and opened the chest and found one of the most remarkable pictures I have ever seen. The bullet had cut the diaphragm and nothing had gotten into the abdominal cavity. We repaired the defect and, so far as we have been able to learn, he has been in good health since. The blood was what led me to go into the chest cavity. It was from the intercostal arteries. So, the manner of approach was correct but the main reason for selecting this route was fallacious.

DR. MARTIN NORDLAND, Minneapolis: Dr. Jones is to be complimented for his excellent discussion of this interesting subject. In this connection, I thought it might be of interest to report a case of congenital diaphragmatic hernia, recognized by the pediatrician three days after birth and which I operated upon five days after birth. The infant was delivered by the obstetrician by cesarean section.

From the time of birth the patient frequently became cyanotic when nursing and vomited after each feeding. Occasionally the vomitus contained a small amount of blood. The pediatrician noted bizarre sounds in the chest and an x-ray examination on the third day after birth revealed the presence of the entire stomach in the right side of the chest. A diagnosis of diaphragmatic hernia was established and an operation was advised. At operation on the fifth day, the stomach was replaced in the abdominal cavity and the diaphragm sutured. The suturing was accomplished with much more ease than in similar hernias in adults. The patient died on the twelfth day from pneumonia. The postmortem examination revealed the stomach had remained in good position in the abdominal cavity.

The case is of interest because of the early diagnosis, the predominating symptoms being cyanosis and vomiting and the positive diagnostic x-ray findings. It is of further interest because the hernia occurred on the right side of the diaphragm. Statistics reveal that only about 22 per cent of diaphragmatic hernias occur on this side. It has been frequently noted that infants with diaphragmatic hernias have other congenital deformities. This case had a large inguinal hernia, bilateral club-feet and a rather marked hypertrophic pyloric stenosis.

DR. O. H. WANGENSTEEN, University of Minnesota: Dr. Jones pointed out that internal hernias, of which diaphragmatic hernia is a type, become obstructed but do not strangulate as readily as do external hernias. This comes about because the structures about the

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apertures through which the intestine may herniate are not so unyielding as in external hernias, where ligaments like Poupart's or Gimbernat's cause obstruction and strangulation simultaneously. Strangulation, of course, does attend neglected obstructed diaphragmatic hernias. It is because of this lesser tendency to strangulation in diaphragmatic hernia that a short trial with suction applied to an inlying duodenal tube is in order before recourse is had to surgery. The gaseous distension and fluid retention in the stomach can be relieved usually, by this means and reposition of the abdominal viscera herniated into the thorax can be then undertaken with less risk to the patient. A preliminary decompression of the colon as advocated by Truesdale is to be done only in those instances in which a "scout" x-ray film of the abdomen indicates that the colon is considerably distended. In diaphragmatic hernias of traumatic origin in which a portion of the colon becomes engaged and obstructed in the diaphragmatic aperture, Truesdale's suggestion of preliminary cecostomy is a good one. For, as has been repeatedly pointed out in recent years in the literature of bowel obstruction, the ileocecal valve and sphincter behave as a check-valve, permitting the entry of fluid and gas from the proximal reaches of the gut, but regurgitation of content from the obstructed colon into the ileum is precluded by the ileocecal valve. If such an obstruction goes unrelied for long, perforation of the distended colon is bound to happen.

The para-esophageal hernias of which Dr. Jones spoke at length are, of course, not so likely to become obstructed. Occasionally, however, volvulus of the stomach may occur in an unusually large para-esophageal hernia. Such an occurrence has once come under my attention. In the main, however, obstruction or strangulation in para-esophageal hernias is decidedly unusual. It is difficult to escape the impression that surgeons have attacked these hernias with greater enthusiasm than they are justified in doing. In a few cases in which the roentgenologist made the diagnosis of para-esophageal hernia with confidence, I have been unable to demonstrate to my own satisfaction at operation that a hernia was actually present. After operation, the roentgenologist declares that the hernia is no longer present, and again re-examination after several months fails to disclose evidence of the hernia. Yet the patient continues to complain of the same symptoms as he did when the alleged hernia was discovered on roentgen examination. The large para-esophageal hernias, which Dr. Jones spoke of, should be repaired surgically when they cause symptoms and the physical status of the patient warrants undertaking operation. Many of you are undoubtedly familiar with the controversy which Prof. Cauerbruch and his erstwhile roentgenologist Berg, now of Hamburg, had over these so-called "Epiphrenische Glocken." Sauerbruch steadfastly maintained that these supra-diaphragmatic shadows of gastric mucosa which roentgenologists observed and described as para-esophageal hernias were often not hernias at all. My own experience with some of these is very much like that of Prof. Sauerbruch, and I would suggest that surgeons exercise some restraint in operating upon all para-esophageal hernias diagnosed as such by roentgenologists.

I had an interesting experience a short time ago with a congenital pleuro-peritoneal hiatus hernia in a man of twenty-seven (University Hospital No. 662347), which may interest you. Until he engaged in a wrestling bout in April, 1937, he had no symptoms referable to the hernia. The application of the "scissors-hold" to the abdomen caused him to become dyspneic and to have abdominal pain accompanied by vomiting. The seizure was soon over and he was again quite well until midsummer when a similar attack came on without apparent provocation. The spell for which he was finally hospitalized in October, 1937, came on during the night and he was brought to the hospital with the

picture of an acute intestinal obstruction. A scout film disclosed the presence of the stomach in the thorax. The left diaphragm could not be identified roentgenologically and it was suggested that the patient might have an evagination of the diaphragm—a suggestion which could not account adequately for the obstruction. Following employment of suction applied to a duodenal tube passed into the stomach, the dyspnea and cyanosis decreased and the abdomen softened. The stomach, however, could not be emptied completely, as indicated by subsequent films. The improvement attending employment of suction, however, was such that the needed operation could now be carried out with equanimity. At operation, the stomach, together with a good portion of the small intestine and colon as well as the spleen were found to have herniated through an hiatus in the left diaphragm. Employing a suggestion of Dr. C. H. Mayo (*Annals of Surgery*, 86:481, 1927), a catheter was introduced through the aperture into the left thorax; air was injected gently with a syringe and it was startling to observe how the small bowel and other viscera which could not be delivered by pulling, came back gradually into the abdomen spontaneously with the establishment of atmospheric pressure in the thorax. The edges of the diaphragmatic aperture were smooth and its location was typical for a congenital pleuro-peritoneal hiatus hernia. Dr. Weinberg, of Omaha, had told me of an excellent plan in the repair of such defects which he has since published (*Surgery*, 3:78, 1938), a plan which I found very helpful in closing the defect. After the placement of interrupted silk sutures, the peri-renal fascia—a very extensive sheet of strong tissue—was sutured over the site of repair. The patient has remained well. This suggestion of Weinberg should prove very helpful in the repair of large diaphragmatic defects.

In pleuro-peritoneal hernias of the right diaphragm, it is the liver which enters the thorax. The other intraperitoneal viscera can not enter the thorax because of the engagement of the liver in the diaphragmatic aperture.

I have had one operative experience with pleuro-peritoneal hiatus hernia in the newborn. Dr. Mayo's maneuver for the reduction of the herniated viscera was then not known to me. After return of the viscera to the peritoneal cavity and closure of the diaphragmatic defect, I found that I could not close the abdominal incision. The peritoneal cavity was too small to hold the returned viscera. I had to content myself with suture of the skin. At postmortem examination, the left kidney was still in the thorax.

DR. F. C. RODDA, Minneapolis: The diagnosis of congenital diaphragmatic hernia may present some difficulties. My own experience concerns two cases. In one child, diagnosis was made and the child operated upon, with excellent results. The other case was that of an infant four weeks of age with the prevailing symptoms of vomiting, cyanosis and collapse. The same roentgenologist who had confirmed our diagnosis in the first case made a similar diagnosis in this child. At operation, we found an enormously dilated stomach and much of the bowel in the left chest. The lung was collapsed and the diaphragm, which presented a very thin poorly-developed musculature, was crowded up to the apex, and, to our chagrin, we found a well-developed pyloric stenosis. Whether the findings were due to an injury of the phrenic nerve or a lack of development of the muscles of the diaphragm, we were unable to determine. There was no opening in the diaphragm and consequently no hernia; but the physical signs and x-ray findings were very similar to those found in a true hernia. The child died.

DR. KENNETH BULKLEY, Minneapolis: The discussion of diaphragmatic hernia is always instructive because none of us has seen many such cases. Little has

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been said here tonight regarding traumatic diaphragmatic hernia and for this reason I would like to report a diaphragmatic hernia, the result of a stab wound. This involves the case of a boy about ten years of age who was brought into Bellevue Hospital, New York, a good many years ago, just as I was making rounds. The history was that this boy immediately previously had been stabbed with a banana knife while attempting to steal bananas. The wound of entry lay in the left posterior chest, was about one inch in length, and through it protruded a tongue of fat which manifestly was omentum. At this time the boy had no abdominal symptoms whatsoever. The chest was opened through an intercostal incision, using a Lillenthal retractor, the omentum was pulled still further from the abdomen, amputated and reduced within the abdominal cavity, and a slit in the diaphragm about one inch in length was repaired without undue difficulty. The chest was closed without drainage; the pneumothorax cared for by aspiration, and the patient returned to his bed.

This case illustrates the necessity of bearing in mind the possibility of an intra-abdominal injury in cases of

traumatic diaphragmatic hernia, particularly by stab wounds or gunshot wounds, inasmuch as on the following morning this boy showed very definite signs of an intra-abdominal hemorrhage of an extent sufficient to necessitate intervention. Following transfusion, the boy's abdomen was opened and there was found an exceptionally long cut of his spleen, bleeding profusely. This could be controlled only by a splenectomy, which was done. The boy went on to ultimate recovery.

Dr. JONES, in closing: I wish to thank the members for their discussions. I have nothing particular to add, but wish to leave the thought that we should always bear in mind the possibility of the presence of a diaphragmatic hernia when making diagnoses referable to the chest and upper abdomen. It is not uncommon for an exhaustive examination to reveal nothing except a small diaphragmatic hernia. If circumstances permit the repair of the hernia, the patient is frequently cured.

The meeting adjourned.

ALBERT G. SCHULZE, M.D., *Secretary.*

Meeting of February 9, 1938

The regular monthly meeting of the Minnesota Academy of Medicine was held at the Town and Country Club on Wednesday evening, February 9, 1938. Dinner was served at 7 o'clock and the meeting was called to order at 8:15 o'clock by the president, Dr. R. T. LaVake.

There were forty-nine members and one guest present.

Minutes of the December and January meetings were read and approved as read.

Upon ballot the following men were elected as candidates for active membership in the Academy:

Dr. Lee W. Barry.....St. Paul
Dr. Roy E. Swanson.....Minneapolis

The scientific program followed.

CLINICAL TETANUS: A SURVEY.

Report of Cases With Unusual Early Symptoms

E. A. REGNIER, M.D.
Minneapolis

Dr. Regnier read his inaugural thesis on the above subject.

Abstract

Twenty-nine clinical cases of tetanus are reviewed. Tetanus toxins are disseminated through the blood stream and not through motor nerve trunks as heretofore believed.

Trismus may be a late symptom of tetanus. Any regional muscle group may be primarily involved. Two cases are reported in which initial symptoms were all referable to the abdomen and simulated an acute abdominal catastrophe. A third case is reported in which the masseters were the last group of muscles to be affected.

A history of abdominal cramp followed by profuse perspiration, board-like rigidity and spasm of abdominal

muscles, other findings of peritonitis being absent, should lead one to suspect tetanus.

Discussion

DR. CARL B. DRAKE, Saint Paul: There are some distinct disadvantages to the present prophylactic treatment of tetanus. There is a certain group of individuals who have a natural or acquired sensitivity to horse serum. There is a much larger group of individuals who, on account of their occupation, are very subject to injury in which infection to tetanus is quite likely. Considerable work has been done by some French investigators in developing an alum-precipitated tetanus toxoid. This toxoid contains no horse serum and two or three injections of 1 c.c. are given at two to three month intervals. In case of a suspicious injury an additional injection is given which raises the antitoxin in the blood sufficiently in most cases. I have not encountered any report of extensive use of the toxoid, which of course is necessary before its clinical value can be determined. It has been used sufficiently, however, to warrant its acceptance by the Council on Pharmacy and Chemistry.

DR. C. B. WRIGHT, Minneapolis: Are there any late sequelae of tetanus such as neuritis or late cerebral symptoms? In looking through the literature I could not find any.

DR. J. A. JOHNSON, Minneapolis: I appreciate very much Dr. Regnier's thorough discussion of this subject, especially his description of the onset of muscular spasm in the abdomen, which is so apt to be mistaken for some intra-abdominal lesion.

My first introduction to tetanus was when I was ten years of age. One of my playmates received a firecracker injury on the 4th of July and died as a result of it. I still remember his terrible suffering.

It has been my misfortune during many years to see a large number of these cases. Over twenty years ago when I was house surgeon in a large hospital in Chicago, it was then our practice that all injury cases receive a prophylactic dose of antitetanic serum while still in the emergency room. During a period of five years I did not see a single case of tetanus develop in any of these cases. We saw, however, many cases that came to the hospital that had not had the pro-

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phylic serum. This serum has been so well established as a preventative of tetanus that it must now be considered a criminal neglect not to administer it in cases that can be suspected of having been infected with tetanus.

At that time also we had considerable difficulty with some cases of post-operative tetanus developing in clean wounds. That was due to catgut. So much has been done in the sterilization of catgut that this condition is not now feared as it used to be. Years ago, after a case of tetanus had developed into advanced stages, the patient practically never recovered. As time has gone on, it has been my experience that more and more of these late cases have been cured; perhaps because now we are giving them larger doses, and I also believe the serum is more potent than it used to be. I believe avertin is one of the best methods of controlling the spasms, especially when they are continued and very severe.

DR. W. E. CAMP, Minneapolis: I would like to ask Dr. Regnier if he has any statistics on the number of cases that develop after head injury as compared to the number developing after injury to the extremities?

DR. REGNIER, in closing: In answer to Dr. Drake's remark about giving prophylactic serum, I wish to state that there has been developed a toxoid for prophylaxis of tetanus. There are very favorable reports, especially in foreign literature, about the use of alum-precipitated tetanus toxoid. This toxoid has been universally adopted in the French Army in the last few years. Some of our American biological houses now have tetanus toxoid on the market. There is no doubt but what there is danger in giving serum to an allergic individual, but these people can be desensitized. Unquestionably the use of toxoids would obviate this danger of serum reaction. Reports from the French Army, members of which have been using toxoid for a considerable length of time, state that once an individual has obtained immunity and is subsequently wounded, he is then given subsequent protective doses of toxoid.

My answer to Dr. Wright's question is that there are no permanent sequelae of tetanus. Pathologically there are no typical lesions in fatal cases. These patients, when they survive the disease, become greatly emaciated and their muscles lose their tone and become exceedingly flabby, but there are no permanent structural changes.

Dr. Johnson stresses the use of prophylactic serum. I can think of no legitimate excuse for not using prophylactic serum in all puncture wounds, wounds harboring foreign bodies and wounds harboring secondary pyogenic organisms. As regards the amount, 1,500 units is considered standard but this dose must be repeated two or three times at weekly intervals in cases that have a great deal of suppuration and where the infections are prolonged. It is a well known fact that one prophylactic dose will not always be protective. One of our cases received prophylactic serum thirteen days after he was wounded and within forty-eight hours of the time tetanus developed. This case promptly died. Another case received prophylactic serum seven days after his injury and subsequently developed tetanus and survived the infection.

In reply to Dr. Camp's question about tetanus associated with head injuries, I am frank to state that there were only two cases in this series that might have had scalp wounds as the focus of infection. One of these cases had a hand injury, therefore the source of infection was not definitely determined. One other case had a neck wound and the incubation period in this case was only four days and terminated fatally. Infections following head injuries are rather infrequent but when they do occur are often very severe.

It is surprising, from a review of the literature, how few head injuries are complicated by tetanus infection.

I am very grateful to these gentlemen for their discussions.

RETROPERITONEAL DERMOID WITHIN THE PELVIS

MARTIN NORDLAND, M.D.
Minneapolis

This case is that of a patient who had an extraperitoneal tumor within the pelvis. It is of interest because of the difficulty experienced in its removal and because of complications caused by its presence during obstetrical delivery about five months previously.



Fig. 1. Cyst anterior to the lower portion of the sacrum and coccyx.

The history of this case reveals that on September 2, 1937, the patient was brought into the hospital by her attending physician for the induction of labor because she was two weeks beyond the date of expected delivery. She had gained 65 pounds during pregnancy and seven pounds in the last week. Medication and bag induction failed to induce labor but a second attempt with castor oil and quinine caused the onset of pain on September 8, at about noon. Pains began slowly and continued with increasing severity without much progress all through the day of September 9. An obstetrical consultant was then called in by the attending physician, who had noted the presence of "a tumor in the vagina." Rectal examination had given this information. The consultant in his examination described the tumor as "antero-rectal." He stated that the tumor was tense and firm, contained fluid and was not tender and further that it extended in the direction of the left sacro-iliac joint. With the pains, the lower margin of the tumor extended down to about 1½ inches above the anal ring. The cervix was completely dilated above the protruding margin of the tumor.

They felt that aspiration was advisable and, with the

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finger in the rectum, they inserted a large needle up to the left side of the rectum and punctured the tumor mass. Nothing was aspirated, but when they withdrew the needle it was filled with sebaceous looking material. A second attempt with a larger needle was also

since the delivery of her baby, it was thought best to postpone the surgical removal of the pelvic tumor for several weeks.

By the first of January, 1938, the patient returned to the hospital in very good condition. The two fistu-

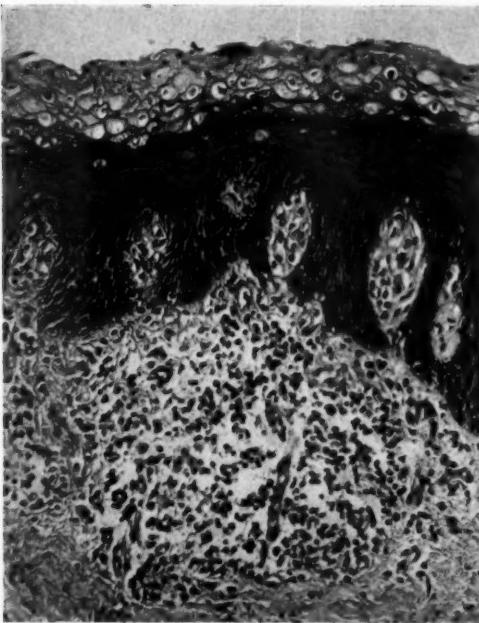


Fig. 2. Microscopic section of cyst wall showing characteristic lining with stratified squamous epithelium and chronic inflammation underneath.

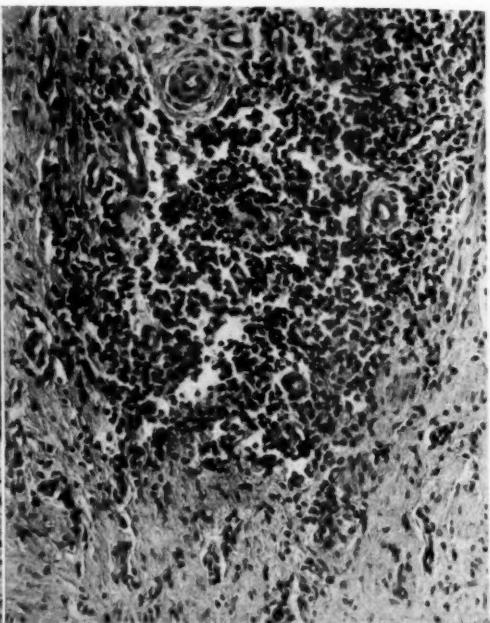


Fig. 3. Microscopic section of cyst wall showing round cell infiltration, plasma cells and pus.

unsuccessful. The skin was then incised and a blunt scissors was directed upward in the same line and in this manner the tumor was widely opened. About one pint of heavy, cheesy, sebaceous material without odor was evacuated. The patient delivered about three hours later without difficulty.

They noted with interest that with each pain a long ribbon of the sebaceous material about 3 inches thick and 10 inches long would be evacuated. Most of the material was saved and by the time the baby's head was on the pelvic floor more than a liter of the material had been collected. Laboratory examination of the material showed it to contain much squamous epithelial and cholesterol substance. The patient promptly became infected and ran a temperature, the drainage became thinner and developed much offensive odor. It was necessary to reestablish drainage through the insertion of catheters into the cystic cavity on the ninth day. These catheters were inserted for a distance of about 10 inches, and as a result of the procedure the temperature dropped promptly. When the catheters were removed five days later, the temperature again became elevated and, with reinsertion and establishment of drainage, the temperature again receded. The patient left the hospital at the end of six weeks.

I was called to see the patient just before she was dismissed. She was still having recurrent elevations of temperature. Examination of the uterus revealed the fundus retroverted and pressed over to the right with the cervix behind the symphysis pubis. There were two fistulous openings high in the perineum near the lower left side of the vaginal outlet. Because her general condition was poor and because it was only five weeks

since the delivery of her baby, it was thought best to postpone the surgical removal of the pelvic tumor for several weeks.

Stereoscopic antero-posterior and lateral plates were made of the pelvis after the injection of the sinus tract with an opaque material. The tract was demonstrated from the region of the labia to a position anterior to the lower portion of the sacrum and coccyx, where there was a fairly large cyst (Fig. 1).

On January 12, 1938, the patient was taken to the operating room. Under general anesthesia a double elliptical incision 3 inches in length was made to the left of the vagina extending down to the perineum including both the fistulous openings. A No. 20 catheter was pushed up into the lower fistulous opening for a distance of about 12 inches. The contents were held in the sac by clamping the catheter. The fistulous tract was dissected out using the catheter as a guide and the lower end of the sac was exposed, dissected free from the ramus of the pubis and the hollow of the sacrum. With the assistant's finger in the rectum, it was possible to free the fistulous tract from the rectum without injury to that wall. The left vaginal wall was similarly protected by keeping a finger in the vagina during the dissection. Because it was impossible to get the highest portion of the sac from below, it was thought best to finish the operation through the abdomen. Two large cigarette drains were placed into the wound from below and the abdomen was opened in the midline below the umbilicus, the peritoneum over the left broad ligament split vertically so that the field of operation which was begun from below was exposed through this opening.

BOOK REVIEWS

The remaining portion of the sac was dissected through this approach and a 3 inch pack was placed in the cavity so created. This was tied to one of the cigarette drains introduced from below. The opening in the broad ligament was sutured and the abdomen closed. The mass removed with the fistulous tract was the size of a large fist. It was found in the pelvis between the vault of the vagina and in front and lateral to the rectum. It was fastened to the ramus of the left pubis anteriorly and to the periosteum of the sacrum near the left sacro-iliac joint. During the abdominal procedure, the left ureter and the femoral vessels were exposed. The sac contained sebaceous and suppurative material and had a smooth lining.

The laboratory submitted the following report:

"Microscopic sections show walls of cyst containing fibrous tissue some of which is elastic. It has a lining, round cells, plasma cells and pus. Some points covered with stratified squamous epithelium with considerable chronic inflammation underneath" (Fig. 2 and Fig. 3).

Pathologically, dermoids are of interest even though they are quite commonly encountered by the surgeon of average experience. Dr. E. T. Bell has suggested that this tumor might be classified as an epidermoid. Bowles states that cystic teratoma must be distinguished from other dermoid tumors which are congenital sequestration tumors found at the lines of embryonic fusion and which arise by the development and inclusion of cells of ectodermal origin. It is possible for retroperitoneal teratomas to develop from the isolated blastomeres or germ cells of an accessory retroperitoneal ovary. It is possible that this is what happened in this case. An ovarian dermoid is considered large when it reaches the size of a grapefruit. Most dermoids range from the size of a hen's egg to an orange. As noted in the history above, this cyst contained more than a quart of sebaceous material at the time of delivery and was as large as a good sized fist at the time of the operation. Koucky, in a recent analysis of a hundred cases of dermoids, states that a typical ovarian dermoid, cleansed of its fat and loose hair, reveals a projection into its cavity. This projection known as the plug, pseudomamma, or focus is covered with hairy skin and contains the parenchyma of the tumor. The rest of the cyst wall is smooth and glistening, reddish in color and wrinkled and 1 to 2 mm. in thickness. The plug or focus is the essential part of the dermoid. Its growth and secretory activity determines the size of the tumor. Forty-one per cent of Koucky's cases had a smooth interior and revealed only slight thickening of the lining to mark the site of the plug and focus. No focus was demonstrated in this case. In his conclusion, Koucky states that dermoids usually occur in the 4th and 5th decades, seldom interfere with child-bearing and that the symptoms are usually due to pressure on the surrounding organs. Our patient was twenty-three years old, and the tumor was recognized because it did interfere with the delivery of the child. Roentgen examination before delivery gave no information. The patient made an uneventful recovery following the removal of the cyst and is in good condition at the present time.

The meeting adjourned.

ALBERT G. SCHULZE, M.D., Secretary.

BOOK REVIEWS

Books listed here become the property of the Ramsey and Hennepin County Medical libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

BOOKS RECEIVED FOR REVIEW

THE COMPLEAT PEDIATRICIAN. Practical, Diagnostic, Therapeutic and Preventive Pediatrics. Revised Edition. Wilbert C. Davison, M.A., D.Sc., M.D., Professor of Pediatrics, Duke University School of Medicine, and Pediatrician, Duke Hospital; formerly Acting Head of Department of Pediatrics, Johns Hopkins University School of Medicine, etc. 250 pages. Price, \$3.75, flexible binding. Durham, N. C.: Duke University Press, 1938.

THE THOUSAND FORMS OF DISEASE. R. P. Byers, M.D. 29 pages. Price, \$1.50, paper cover. Boston: Superuniversity Publications, 324 Newbury St., 1938.

OPERATIVE GYNECOLOGY. Fifth Edition. Harry Sturgeon Crossen, M.D., Professor Emeritus of Clinical Gynecology, Washington University School of Medicine, etc., and Robert James Crossen, M.D., Assistant Professor of Clinical Gynecology and Obstetrics, Washington University School of Medicine, etc. 1076 pages. Illus. Price, cloth, \$2.50. St. Louis: C. V. Mosby Co., 1938.

J. P. MURPHY—STORMY PETREL OF SURGERY. Loyal Davis. New York: G. P. Putnam's Sons, 1938. Price \$3.00.

No American surgeon ever received more criticism at the hands of his fellow surgeons than did J. B. Murphy of Chicago. Few received more honors at the hands of the profession and public. This biography is beautifully written by a Chicago surgeon who knew J. B. and is as impartial as a biography could be. After reading the volume one can appreciate how this surgeon's dynamic personality, his inconceivable industry and his unsuppressable ambition led him to the top of the ladder but not without his being the target for much mud slinging and some justifiable criticism. This biography reads like a novel and will prove interesting especially to one who ever had the privilege of attending one of J. B.'s clinics. C. B. D.

HEART FAILURE. Arthur M. Fishberg. 788 pages. Illus. Philadelphia: Lea and Febiger, 1937.

Of the many volumes concerning heart disease which have appeared in recent years none has been of more value to the physician than the publication under review. The author has well succeeded in bringing together the vast amount of work which has been done in recent years on problems concerning the circulation, and he has pointed out the reasonable deductions

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which can be drawn from this work. The work is essentially one on pathologic physiology of the circulation, a valuable contribution to our knowledge of the reasons for the various manifestations of circulatory disease.

The author's descriptions of and differentiations between cardiac failure and peripheral circulatory failure lead to an intelligent appreciation of the care of these conditions. They have been all too often regarded as simply heart failure.

The work may be divided into three major sections. The first describes the signs and symptoms which accompany heart disease, as well as the fundamental circulatory change which can be measured in quantitative terms. The methods of production of these changes are described. The second deals with the application of these fundamentals to the various types of circulatory failure, and the third part discusses the treatment which modern concepts indicate.

Any adverse criticism would be too insignificant to mention in discussing a work which has so much to offer the physician as does this volume.

JOSEPH F. BORG, M.D.

POISONING WITH CICUTA MACULATA OR WATER HEMLOCK

(Continued from Page 262)

in abundance. While one had eaten the roots, the other had partaken only of the flowers. It is interesting to note that the one who had eaten the root and stock was very sick and had convulsions, while the other who had eaten the flowers but no roots had no convulsions.

In the older boy, besides the violent convulsions, there was unconsciousness, protruding eyeballs, and frothing at the mouth. The froth was blood tinged. Cyanosis was extreme and the corneal reflexes absent. The jaws were set and there were severe twichings of the muscles of the face. The abdomen was negative. The fingernails were cyanotic and the hands were tightly clinched.

During the convulsion it seemed as if the boy was about to die from suffocation. The convulsions lasted on the average of about ten minutes, being followed by a state of exhaustion. The patient remained cyanotic and unconscious. This patient had five convulsions. Following the last convulsion, the boy, exhausted, fell into a deep sleep.

The younger boy, who had eaten the blossoms, complained of general weakness, faintness and nausea. Slight cyanosis and nervous twichings were also present. Dizziness was a prominent symptom. There was evidence of general collapse and the extremities were cold.

Treatment consisted of gastric lavage and enemas. In the other boy, it was necessary to use a metal mouth gag in order to pass the stomach tube. After his stom-

ach was evacuated, it was necessary to administer morphine hypodermically. Stimulants such as strychnine, black coffee, strong tea, whisky, caffeine and sodium-benzoate were administered. Artificial respiration was necessary. His urine showed a trace of albumin the first day. The second and third day the urine was increased in amount but it contained an abundance of blood and albumin. His condition remained the same until the seventh day when he appeared more rational and his appetite began to improve. There were still dark rings under his eyes. The urine had increased in amount and contained less blood and albumin. The kidney condition in general was treated by rest in bed, elimination, low protein and a salt-free diet. Iron, manganese and copper were given later to combat the anemia. Recovery followed.

The younger boy, who could swallow was given hot water containing tamaric acid at thirty-minute intervals followed by lavage. This was followed by prompt recovery.

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